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Color: A Semiotic Approach (A Video Tape Presentation)

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ROCHESTER INSTITUTE OF TECHNOLOGY

A Thesis Submitted to the Faculty of
The College of Fine and Applied Arts
in Candidacy for the Degree of

MASTER OF FINE ARTS

COLOR: A SEMIOTIC APPROACH
(A video tape presentation)

By

Michele Italiano

May 16, 1985

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Date 5/13/85

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The extent to which I need to thank my parents goes far beyond the written word. Their complete and total support of my two years at RIT was more than any daughter could expect. Without their love and understanding, my two years at RIT would never have become a reality.

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OBJECTIVES

For some time now, I have been curious about the struggles and frustrations that color and its properties cause design students. That curiosity has lead to my development of an educational tool that will help sophomore design students with their color choices.

The intention was to develop an organizational strategy which would provide a set of step-by-step procedures and give designers a means of addressing complex color considerations. This structure will aid design students in the organization of their thoughts about color.

Students who follow this structure one step at a time, answer the questions that have been raised, and relate their choices to the context of each problem, will find that color, as a design element, is not as frustrating as they may have once thought.

Thesis Statement

The goal of this thesis is to use the Semiotic Structure to develop an instructional strategy which will emphasize the syntactic, semantic and pragmatic aspects of color and color design. This strategy shall be in the form of a video tape geared to sophomore level graphic design students.

Initial Research

My research began by looking at the work of others on the subject of color. To my surprise, there was no analysis or framework for the designer to use as a reference. There have been many studies done on the subject of color in general by distinguished people like Faber Birren, M.E. Chevereul, A.H. Munsell, Ogden Rood and Josef Albers. However, these all approached the subject of color differently. Their work either exhausted the topic of color theory; set a pattern of do's and do not's for color schemes; approached color from a technical viewpoint; or set a method of organizing color. In all of this I did not find a single reference which could be used as a structural outline for the graphic designer.

From this initial research I developed my set of objectives. These included the following:

First, the tool should consist of a set structure. This structure should create a series of step-by-step procedures which would lead to a concrete and justifiable color solution to each problem.

Second, this structure would not be a set of do's and do not's with regard to color schemes, but rather it would be flexible and able to solve any design problem that might be encountered.

Once these intentions had been formed, the challenge was to find an organizational tool from which I could build my color strategy.

During a discussion with Dr. Richard Zakia, I was given notes from a lecture by Massimo Vignelli entitled, "Chromotype & Connotations". In this paper, Vignelli discussed the use of the Semiotic Structure in relation to color. Although Vignelli focused on specific colors and their emotional connotations, he made a statement which

convinced me that semiotics was the organizational tool that I had been looking for.

That statement is as follows:

It is the task of the designer to bring all the elements involved in the communication process to fruition in a way that has not only semantic roots, syntactic discipline, but above all, perception and reception at the pragmatic level. The notion of chromotype is therefore quite interesting, for it brings forward issues which otherwise would be left either latent or obliterated by personal interpretation. 1

Note: Vignelli's use of the word "chromotype" is a direct reference to his lecture where he suggests that color holds as much associative power as a logotype. Hence, his use of the word "chromotype".

A SEMIOTIC APPROACH TO COLOR

Once the decision was made to use the Semiotic Structure as a basis for my organizational method, I began to research the field of Semiotics.

Semiotics is a complicated field. It involves the study of the language of signs and can be applied to any subject, since a sign, in the semiotic framework, is anything that represents another object.

After discovering the complexity of the Semiotic Structure, I decided to simplify it by focusing on the three basic divisions of the structure: syntax, semantics and pragmatics. These three structural divisions would be the basis for my organizational strategy.

The next step was to begin to define these three terms, as they applied to design, in a simple and general manner. I felt strongly that the viewer of my video tape should have a view to what the structure was based on. There was no need to confuse viewers by presenting the Semiotic Structure in depth, but there was a need to present a general view of the structure. This would legitimize the basis of my strategy.

I began by defining the Semiotic Structure as a process that enables the designer to simplify and organize complex problems, putting my emphasis on the fact that the structure dissects the problem into three inherent dimensions: syntax, semantics and pragmatics.

My next decision was to divide and distribute the emphasis of

my presentation. In collaboration with my committee it was decided that the emphasis would be distributed in the following percentages:

1. Introduction to the Semiotic Structure: 5%
2. Color Syntax: 15%
3. Color Semantics: 25%
4. Color Pragmatics: 45%
5. Conclusion: 10%

The introduction to the script served as a brief exposure to the general Semiotic Structure and how it applies to design. The next sections of the script were intended to relate this structure specifically to the subject of color.

The first step was to rename syntax as Color Syntax and to require the designer to look at the elements of color theory such as: color harmony, balance, rhythm, complementary color combinations, analogous color schemes, figure-ground relationships and juxtaposing color relationships. Unfortunately, because of an effort to keep the presentation under thirty minutes, all of these properties could not be discussed in the video presentation. The goal of these syntactic considerations is to get the student to make a list of all the possible colors, schemes, relationships and qualities that were possible in a specific design problem.

After the syntactic decisions have been considered the designer should look at the semantic dimension of the Semiotic Structure. This dimension was renamed Color Semantics. The semantic dimension of the Semiotic Structure was much more complicated than its predecessor. The job of defining these considerations was the most difficult. The complexity of color at this dimension led to many long nights of clarifying the definitions of Color Semantics.

In the language of Semiotics, semantics is broken into three parts: the iconic sign, which resembles or shows a likeness to the object that it is representing; the indexic sign, which indirectly suggests or points to the object it is representing (The indexic sign is thought of as an emotional or suggestive mark left by the actual object); and the third semantic sign which is the symbolic sign, showing the representation by means of symbolism.

These divisions of semantics were renamed and were applied directly to my color structure. The iconic sign is called Object Color. When employing Object Color, the designer would show the image or object in its actual color or at least the color that the audience would expect to see. The indexic sign, I renamed Suggestive Color. When the designer chooses to use Suggestive Color, a visual message or mood is created because the audience is able to associate that color with past experiences. With this type of color use, the designer is able to capture the emotion or meaning of the problem without realistically representing the object, as is the case with Object Color. The third division of semantics, the symbolic sign, I renamed Symbolic Color. When Symbolic Color is used, the designer creates a visual message by using symbolic relationships. These symbolic relationships can be between the color and what it represents historically, politically, culturally, religiously or traditionally. In this case, it would be essential for the designer to research a color's symbolic meaning. Every color carries a symbolic meaning and designers should be aware of these meanings. Symbolic Color use is an effective and powerful design tool; however, if it is improperly used, the designer could offend his audience.

Pragmatics, the third dimension of the Semiotic Structure, I renamed Color Pragmatics. This section was where I chose to place the most emphasis. The areas of printing and paper were chosen because these are the two media that designers are involved with the most. Architectural signing, graphics, audio visual and computer graphics were discussed for two reasons. First, because these are media which the designer often encounters and second, to emphasize that every medium has its own unique color considerations.

The Semiotic Structure provided a grounding for my color organizational strategy. It is a tool that forces its user to consider each of its three dimensions in part and then as a whole. Color also needs to be looked at in this way. Color, because it is subjective, relative and carries emotional and symbolic connotations, can become a confusing design element. My hope is that this new strategy will provide students with a means to organize their thoughts. If they can follow the structure one step at a time; answer the questions that have been raised; and relate their choice to the context of each problem; they will find that color, as a design element, is not as frustrating or complicated as they may have once thought.

SCRIPT

There are a number of conflicting views which exist on the subject of script writing. Some specialists suggest that the visuals should be collected first and the script written to support those visuals. Others take a different approach. These people suggest that the script should be written first and then the visuals collected.

The latter is the approach that I took. I decided that the written information was where I would place my emphasis. Therefore, it was essential first to develop a clear and coherent narration and then to collect visuals which would support this narration.

In spite of the conflicting views on how to approach the task of writing a narration, most agree that a number of rules should be adhered to when developing a script. These include the following:

1. Keep the narrative as conversational as possible.
2. Use short, clear sentences with only one idea per sentence.
3. Use vocabulary appropriate for the grade level; explain ideas which may not be clear to them.
4. Use only one idea per slide. Make certain that the text applies to only what is shown in the visual.
5. As far as possible, keep sentences in the present tense, except in historical matter.
6. Do not break sentences from one visual to another unless you can maintain continuity.
7. Vary the length of the narration from frame to frame to avoid monotony.
8. Occasionally insert a question to encourage the viewer to do some thinking.
9. Avoid use of the all-inclusive terms: all, none, every, and always.

10. Avoid controversial statements.
11. Accentuate the positive.
12. Avoid phrasing that is colloquial, poetic, or subject to more than one interpretation.
13. Write concisely. Avoid using more than fifty words in one frame. 2

The development of the script began with a very detailed outline. Once this outline was finalized, I began to research each subject in that outline. The actual script is an outgrowth of the extensive research which I did. The first draft was submitted to my committee members on March 11, 1985. After meeting with my committee members, the script was revised and redistributed on March 21, 1985. This second draft was returned to me with notes for only a few minor changes. The third and final draft was accepted by my committee members on March 26, 1985.

The following pages of this paper include that final version of the script.

NARRATION: Jurgen Wilson

SOUND EDITING: Jurgen Wilson and David Stone

VIDEO TRANSFER: Instructional Media Services
Rochester Institute of Technology

MUSIC: Tim Weisberg

LENGTH: 25 minutes

TOTAL NUMBER OF SLIDES: 218

Designer Massimo Vignelli once said, "The notion of color within the semiotic structure is quite interesting, for it brings forward issues which otherwise would be left latent or obliterated by personal interpretation."³

Semiotics is a process that enables the designer to simplify and organize complex problems. It provides a structure that dissects the problem into three inherent dimensions: syntax, semantics and pragmatics.

Many of the world's greatest designers have subconsciously used this structure for years. Only recently have they taken the time to define the fundamental dimensions of the design process.

This statement by Massimo Vignelli sums up his thoughts on the importance of the semiotic structure: "It is the task of the designer to bring all the elements involved in the communication process to fruition in a way that has not only syntactic discipline, and semantic roots, but above all, perception and reception at the pragmatic level."⁴

In design, syntax can be defined as the basic design elements

related to visual or aesthetic considerations. A list of some design elements might consist of line, shape, balance, form, typography and color.

Semantics refers to the designer's concern with how the syntactic elements articulate the meaning of the specific design problem. Does the syntax list provide relationships that visually contribute to the message the designer is presenting?

Pragmatics relates to the practical or useful elements of the problem, such as cost, legibility, time limits or size factors.

These three dimensions of the Semiotic Structure can be applied to color.

A color syntax list might include the characteristics of color and the elements of color theory. We should ask the question: What are our color choices?

The semantic dimension of color within the Semiotic Structure refers to questions like: What does the use of this color represent? Is the color appropriate to the situation? and Why did we choose this color?

Color pragmatics is concerned with practical color considerations and their application to media like printing, paper, exterior signage and wall graphics, audio-visual and computer graphics. Questions are raised: What is the best method to meet our needs? How will the end product be made? and Is the sign legible?

Let us now look at color syntax, semantics and pragmatics in more detail.

Color syntax consists of the basic elements of color theory

which are important to the designer. Assuming that the viewer has a grounding in color theory, we will refresh our memories and review the three basic characteristics of color: hue, value and intensity.

Hue is the name of a particular color. It is the quality by which we distinguish one color family from another, as red from yellow or green from blue or violet. We can organize these hues in a color circle.

Value is the lightness or darkness of a color. Value has a direct relationship to the grey scale which moves from black to white.

Intensity, also called saturation or chroma, is the purity or strength of a particular color. It is the quality of color by which we distinguish a full strength color from a diluted or neutralized color. We can think of it in terms of removing a proportional amount of pure color until we reach a state of neutrality.

These three characteristics of color work together. They give the designer an unlimited number of color choices.

To further understand color semantics, we shall divide it into three parts: Object Color, Suggestive Color and Symbolic Color.

The first division is called Object Color. To clarify this use of color we must ask ourselves the question: What likeness or relationship is there between the color we have chosen and the actual color of the object? In this case the object is shown in its actual color, or at least the color we expect to see.

In these promotional brochures for the Macintosh and Lisa computers, the consumer recognizes the product by the realistic color representation of the object.

In this ad for Henessey Brandy the object is shown in its actual color, giving the consumer a realistic representation of the product.

The second division of color semantics is Suggestive Color. Here, the use of a particular color creates a visual message or mood because we are able to associate that color with our past experiences. Ask the question: What are your feelings when you look at a particular color? Color used suggestively becomes a tool with which the designer can create a particular feeling or emotion in the viewer.

Most companies or institutions have an image which is rooted in their history and their relationship with the public. Suggestive Color can be used by the designer to help transmit or project this image to the public.

In the program designed for Bloomingdale's department store, Vignelli emphasized the store's diversity by designing nine boxes in nine different colors, and distributing them throughout the store. The boxes had no product identification other than the colors themselves. This is an example of identity without verbal branding. It is achieved through the suggestive use of color.

In this promotional piece for Apple Computer, the designer stressed the company's corporate colors. The rainbow of colors creates a friendly image with diversity; exactly the character of the company's products.

This brochure from Citibank projects the classical corporate image of the bank. The deep blue with a slight amount of red on a sophisticated beige paper helps project this image. It reinforces

their portrait of dependability.

At the time of the Bauhaus, suggestive color was employed as a means to emphasize simplicity. Primary color combinations with the addition of black became an overall scheme used to achieve this simplification of form and typography.

By studying the emotional associations of colors, designers can begin to understand sensitive color concerns.

The third division of color semantics is Symbolic Color. A visual message is created by means of symbolic relationships between a color and what it represents historically, politically, culturally, religiously, or traditionally. The question should be asked: Are we making a symbolic relationship between the color and what it is representing?

The logo for the supermarket chain, Stop & Shop is a good example of symbolic color use. Red for stop and green for shop have an elementary significance because of the color association with a traffic light.

Another example of symbolic color use is the identity mark of Texaco Petroleum Products. According to the company's marketing department, "... The red star and the green T have always been featured in the company's trademarks and logos. The colors were derived from one of the six historical flags of Texas, where Texaco was originally incorporated."⁵

The use of red in this NO SMOKING sign is an example of the visual power of color. Although there is no written explanation, viewers understand the sign. The symbolic shape and a learned

association with red, meaning stop or danger, alerts the viewer with the sign's message.

Designers should know that there are differences between cultures and how they understand color. For instance, a yellow color scheme should not dominate a piece to be circulated in the Far East. Yellow is offensive to the people of these countries. It is crucial for designers to research a country's color prejudices. If designers are not aware of these prejudices, they can seriously offend the people of the country.⁶

Symbolic Color is a powerful tool. The designer should take the time to carefully study these considerations.

Color pragmatics raises the questions: What are the practical considerations: What is the best method to meet these needs? and How will the end product be produced?

Printing is the action of reproducing an image in quantity. It is the transfer of an image from one surface to another through a number of different processes. Commercially, three major processes are employed: Offset-Lithography, Gravure and Screen Printing. Each process has its advantages and limitations in terms of color and other design considerations.

Offset-Lithography allows considerable freedom in design and in the use of all types of artwork, special effects and color. Solid, unscreened imagery is a very basic characteristic, and allows for good quality in reproducing type. Offset-Lithography is capable of reproducing quality halftone screens to create a subtle tint of a color.

Every image in Gravure printing is screened. There are no solid printing areas. Therefore, it is wise to stay away from extremely small and delicate type. It tends to fracture in the printing process. The beauty of Gravure is its ability to produce high-quality black and white imagery. It provides the richest black and the widest tonal range of all the printing processes. Gravure is capable of quality color printing. It is the best method for producing extremely long runs. For instance, the New York Times Sunday Magazine is produced by Gravure.

Screen printing is used for three dimensional display, limited run poster and banner work. The inks used in screen printing generally are opaque so color blending cannot be achieved by over-printing. A new screen must be prepared for each color in the design. Because of opacity of the pigment, rich and brilliant color effects are possible. This cannot be accomplished in other mediums.

Good communication between the designer and printer is crucial, especially when specifying color. Throughout history there have been many color systems which have provided a means to describe color. Although not used today, the Color Harmony Manual, published by Container Corporation of America, made a major break-through in identifying color. The Munsell Color System published in 1905 is still a popular tool amongst scientists and photographers.

In printing, the most widely used system is the Pantone Matching System. It consists of a full line of color specification books which are coordinated by Pantone Color Numbers. The designer and printer both find the Pantone Matching System an invaluable aid in

explaining color. Instead of struggling to specify color by the use of common terms or by searching printed color samples to approximate what he is after, the designer simply identifies the color by a Pantone Number and refers the printer to the Pantone Manual.

Once the colors have been determined, a printed piece can be produced by one of two ways: flat color printing or by four-color-process printing.

Flat color printing is described by the number of colors used. Because each color requires a separate run on the press, the more colors used the more expensive the job.

A one-color job means that the image is printed in one color specified by the designer. The one color refers to the ink color or printed color and not the color of the paper. It is possible to achieve a wide variety of effects working with only one color. For example, an image can be printed solid at 100% color, screened between 5% and 95% color, or reversed and dropped out allowing the color of the paper to be the image. In addition, the use of a colored paper can add variety to a one-color job.

The addition of a second color provides a variety of design possibilities. Not only can the two colors be used separately, but they can be combined as solids and screened tints to produce a wide range of colors.

Varnish can be added to the printed piece and treated as an additional color. It is usually applied as a last step in the printing process. In addition to increasing resistance to abrasion, fingerprints, moisture, chemicals and weathering, varnish adds brilliance

and density to the final piece. Varnish is also used to achieve special effects. An image can be echoed, highlighted or made to shine or not to shine by the addition of a coat of varnish. Color tints may also be added to a varnish. This creates very subtle and effective changes in the background or the image.

Four-color-process printing is the method used to reproduce full-color continuous tone images from originals such as transparencies, color prints, and paintings. Four-color-process printing uses four specific process-colors. These are yellow, magenta, cyan and black.

The four printed process colors appear as dots of solid color which combine to duplicate the full range of colors found in the original image. Colors are created, not by a physical mixing of the inks, but by the optical mixing of the four colors.

Before the final job is printed, the designer receives a sample piece, called a proof. From this the designer checks the color, the size of the reproduction, and whether or not the overall quality is acceptable.

The most simple proof, the monochromatic brown or blueprint, is used to show the register between colors and the general appearance of the final job. This type of proof is used for simple color line and halftone work since there is no actual color representation.

Designers also receive proofs which allow them to check color. Pre-press proofs are made directly from the film separations before the printing plates are made. There are two types of pre-press proofs. Color Key is an overlay system. Here, each of the four separations are on separate sheets of acetate, when overlayed the designer is able

to check the color quality. A Chromalin proof combines the colors on one sheet of coated paper. This method provides a high-quality color proof.

Press proofs are made directly from the printing plates. They use the same ink and paper that will be used for the final job. Along with press proofs the designer will usually receive a set of progressive proofs or "progs". Progs consist of a number of sheets, each showing a process color by itself and in combination with others.

Another accurate method of color proofing is checking the color on the press with no preliminary proofs. If changes are needed the press is stopped, the negatives remade or altered, and new plates are made. This method has the advantage of running the color in place and using the actual ink and paper. However, it is an expensive method of proofing.

Paper has a large effect on the final appearance of the work. Designers should consider paper texture, weight, coating and color when choosing a paper.

An image which is printed on a smooth paper will have good detail, contrast and color, as in the bottom image. However, textured paper can also give interesting results. This is shown on the top half of the image. Here, the designer has chosen a linen finish. The image is a linen embroidery and its character has been captured perfectly.

Coated paper can radically affect an image. A special sealer has been applied to coated paper which keeps the ink from contacting the paper fibers. Halftone dots, and color rests on the surface,

creating a crisp clean image with good color detail. Uncoated paper absorbs ink into the surface, which breaks up halftone dots. Yet if the designer is looking for a soft and subtle effect this is clearly the paper to choose.

The color of the paper also affects the outcome of a design. Paper can be colored in one of two ways. First, the color can be in the paper. There has been a dye added directly to the paper fibers. This is the case with bond or text papers. This type of colored paper can give added effects to a design, for the character of the paper is incorporated into the design. The second type of paper color is applied to the surface. A good example is chromcoat. Here a gloss color coating is applied to the paper surface giving a brilliant colored finish.

Like other design considerations the choice in paper should be based on the intention of the finished piece and the color quality required by the designer.

The designer is concerned with many more media than just the printed piece. For instance, an effective signage and graphics system should function not as a separate entity but as an integral part of its environment. Carefully planned signs can communicate essential information while also enhancing the environment. Graphics in the form of murals, flags and banners add color, movement and vitality to an area.

The sensitive designer is always aware of the aesthetic relationship between the object that is designed and the place where it is to be used; this is particularly important in considering signing colors. As a design element, color is essential in making the sign

system appropriate to its environment. Colors for sign panels and copy should not be selected arbitrarily or just because they go well together. Sign colors should relate to the colors and materials of the building, or of the space where the sign is to be installed.

The line between signing and architectural graphics is often subtle, or non-existent. Some wall graphics can serve the dual purpose of displaying information and providing large areas of color. More commonly, architectural graphics are nonfunctional, decorative designs which enhance architecture in various ways, such as providing an effective focal point; adding color or a sense of scale; reinforcing the architectural design; or supporting a thematic idea.

The use of color for its own sake has been emphasized in certain architectural environments. Strong color combined with bold graphics creates design elements of such impact that they cannot be ignored.

An audio visual presentation is an effective means of communication. It can be simple, using one or two projectors; or a complex multi-image show, creating an atmosphere which completely engulfs the viewer with the subject matter. But no matter how complex the presentation, there are some basic design and color considerations.

Legibility of the text slides depends on type arrangement and color combination. Type must be large enough for the entire audience to read without a struggle and color combinations must be used to ease the comfort of reading. For instance, red on green or blue on orange is difficult for the reader, but black on grey or white on blue are easily read.

The designer must also be aware that certain colors inherently

cause problems when projected. Dark blue or dark purple project almost black and the designer should compensate for this fact by lightening these colors in value so they project as originally intended.

Color can direct a presentation. A systematic use can subconsciously guide the viewers through the subject matter, giving them a feeling of logical and informative progression.

Computer graphics has opened a new field of technology for the designer. The newer, more sophisticated machines offer the designer millions of options in color. For instance, the Genigraphics system has a color pallet of eight million colors, and the Artronics system allows the designer a choice amongst sixteen million colors. As impressive as this might be, it can be disastrous. Without a strong background in color the designer may misuse the computer, creating confusing and visually offensive color graphics.

There is no difference between color use at a computer terminal and color use at the drafting table; the same rules apply. At the terminal, colors can be quickly manipulated allowing us to try many color combinations in a short period of time. Colors can also be easily changed allowing us to study how juxtaposed color affect one another. These features should make the designer's job simpler, not open a new field of color use. The basic rules of color harmony, balance, proportion, and contrast still govern color choices.

Once the designer has established his work at the computer terminal, he is faced with the problem of getting a tangible piece of art. This is called hard copy output, such as slides, printouts,

transparencies, or computer driven plots. The method chosen will depend on the intention of the work. The designer must be aware of the fact that these hardcopy pieces are only copies of the original piece of art. Therefore, the color and image quality will not be the same as that on the monitor.

Color, because of its complexity, needs to be looked at in terms of its aesthetic and practical validity. The Semiotic Structure, as we have seen, provides an organized method in making color decisions.

When the Semiotic Structure is used properly, the designer should make a syntax list which provides general color choices. In this preliminary sketch, the designer has made a visual syntax list of colors that are being considered. Remember to ask the question: What are my preliminary color choices?

With this list in hand we should look at the semantic considerations. This will help us focus on the preliminary choices and pinpoint the ones that portray the meaning or emotion of the problem. With these semantic sketches the designer is investigating which colors best capture Grace Kelly, the actress. The final choice will be based on the colors and image that portray Grace Kelly creatively. Again, ask the questions: What does the use of this color represent? Is the color appropriate to the situation? and Why did we choose this color?

Now that we have pinpointed our color choice we must look at the pragmatic dimension. This forces us to face the reality of production. In this comprehensive sketch the designer has decided to use Pantone colored papers with a violet Color Key overlay. The next decision would be to choose the best method of printing. The questions

would be asked: How can we produce what we have designed? and Which process will produce the best image quality?





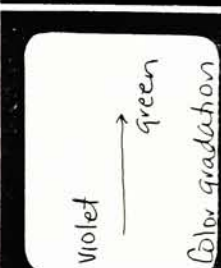

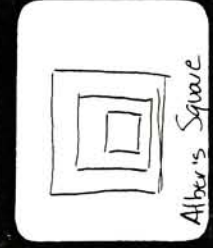
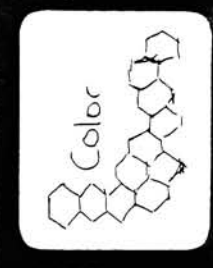

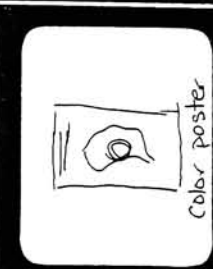
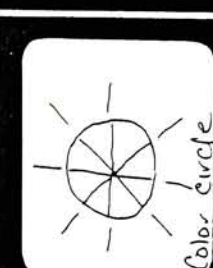
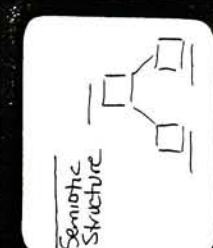
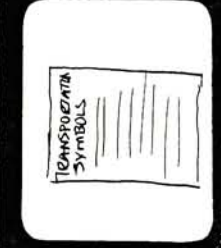
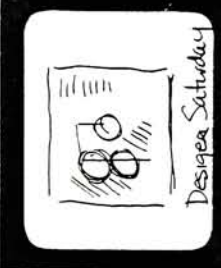
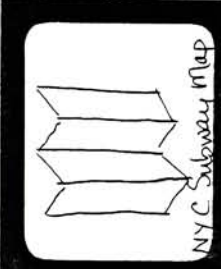

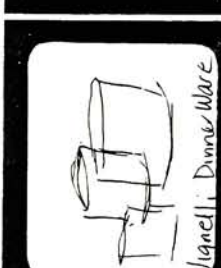
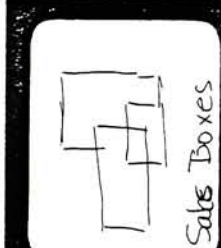
As designers we must remember that the Semiotic Structure is a tool and should be used to assist us in arriving at a concrete solution. Color is the most complex, relative, and subjective visual element in design. However, with consistent structured use, designers can learn to master color and add a special sensitivity to their work.

THE STORYBOARD

The storyboard is a traditional means of organizing visual sequences. It tells the producer precisely which visual relates to which piece of narration. The development of a concise and accurate storyboard is the key to the success of any visual presentation. It forces the producer to break up the script and pinpoint the location of the visuals.

I began my storyboard with the completion of the first draft of my script. By this time I had made about one half of my slides. This tool was an invaluable asset in organizing these slides. It also uncovered the areas in which I needed more visuals.

The following pages of this paper include the final version of my storyboard.

 <p>green → violet Color gradation</p>	1.	 <p>Sunset</p>	2.	 <p>blue → red Color gradation</p>	3.	 <p>Flowers</p>	4.	 <p>violet → green Color gradation</p>	5.	 <p>Circle pattern</p>	6.
 <p>Albert's Square</p>	7.	 <p>Color</p>	8.	 <p>A Semiotic Approach</p>	9.	 <p>Color poster</p>	10.	 <p>Color circle</p>	11.	 <p>Semiotic Structure</p>	12.
 <p>TEMPORAL SYMBOLS</p>	13.	 <p>DESIGNER SATURDAY</p>	14.	 <p>NYC SUBWAY MAP</p>	15.	 <p>Knoll Design</p>	16.	 <p>Vignelli, Dinner Ware</p>	17.	 <p>Saks Boxes</p>	18.

Many of the world's greatest designersfor years.

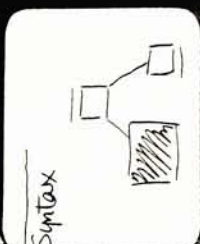
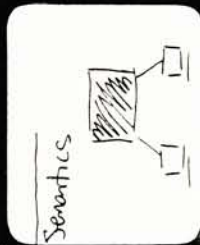
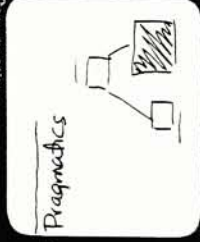

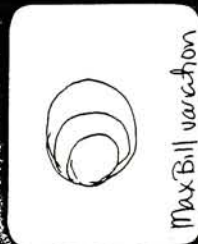

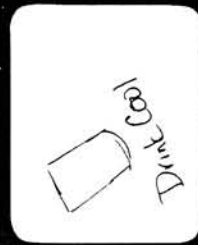



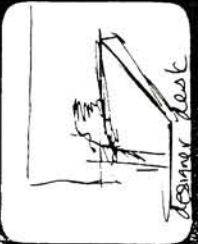

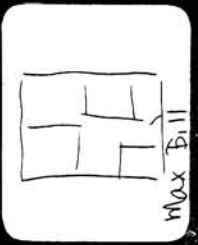
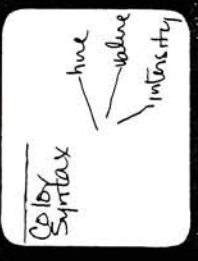

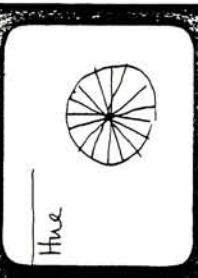
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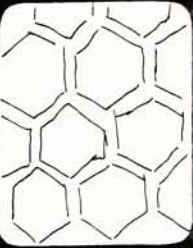
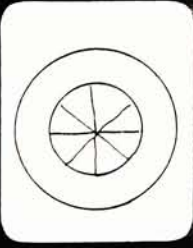
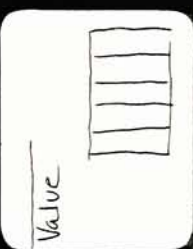

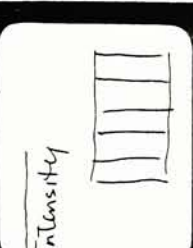
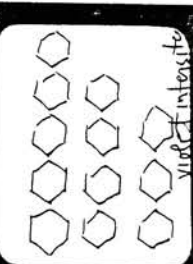
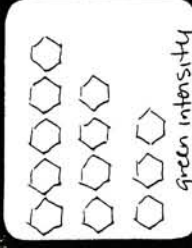
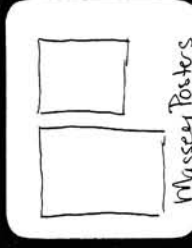

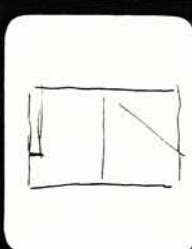
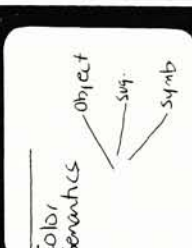

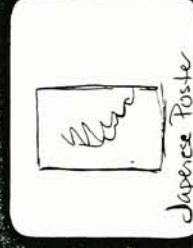

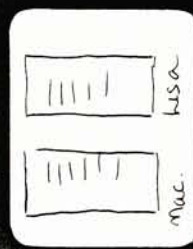

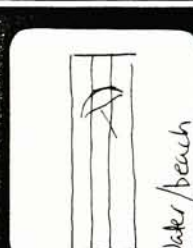
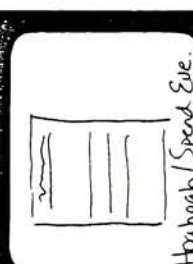
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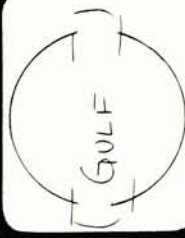



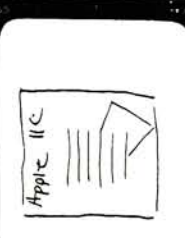
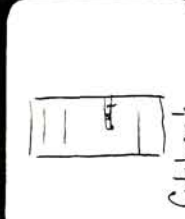
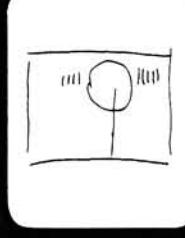






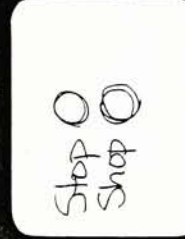
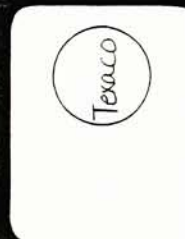
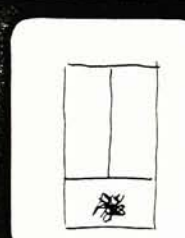
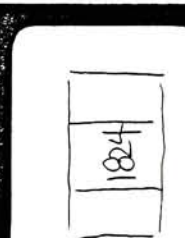
It is the task of the designer tohas not only




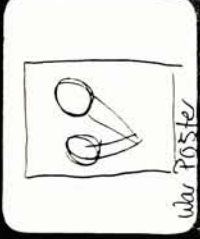
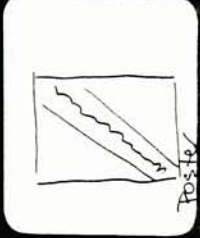
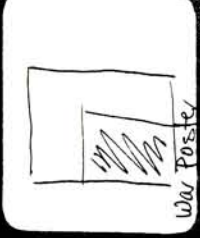




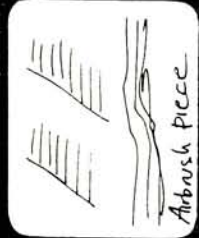




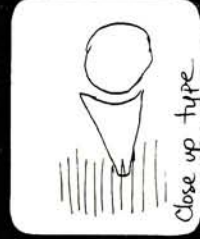


syntactic discipline semantic roots, butperception,

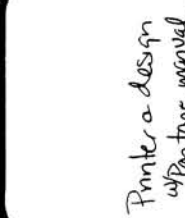
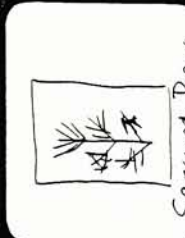
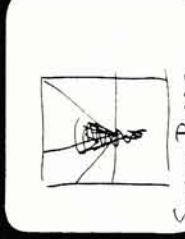
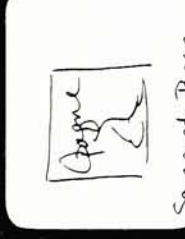
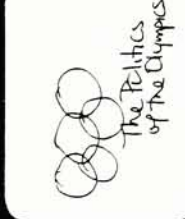

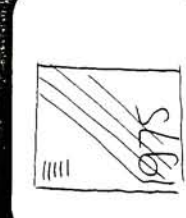
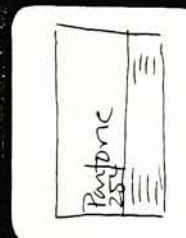
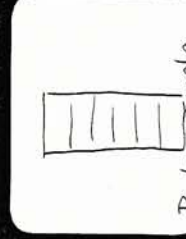
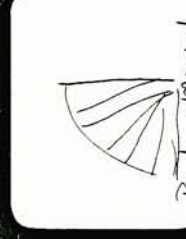
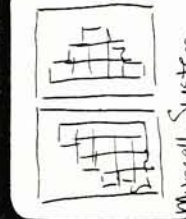

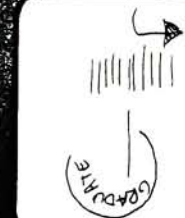

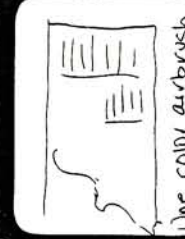
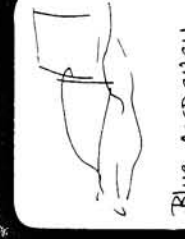

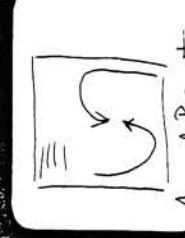
and reception at the pragmatic level.

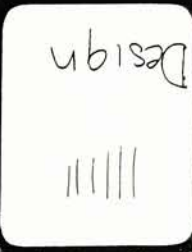





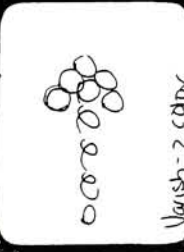
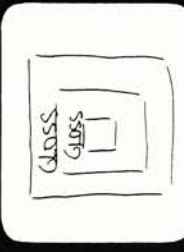



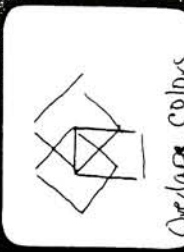






				<p>19. In design, syntax can be defined as theconsiderations.</p>	<p>20. A list of some design elements mightand color.</p>	<p>21. Semantics refers to the designer'sdesign problem.</p>	<p>22. Does the syntax list provide relationshipspresenting?</p>	<p>23. Pragmatics relates to the practical orsize factors.</p>	<p>24. These three dimensions of the semioticto color.</p>		
						<p>25. A color syntax list might include thecolor theory.</p>	<p>26. We should ask the question, What arecolor choices?</p>	<p>27. The semantic dimension of colorrepresent?</p>	<p>28. Is the color appropriate to thethis color?</p>	<p>29. Color Pragmatics is concerned withprinting,</p>	<p>30. paper, exterior signage and wall graphics,</p>
						<p>31. audio-visual and computer graphics. Theraised:</p>	<p>32. What is the best method to meet ourlegible?</p>	<p>33. Let us now look at color syntax,more detail.</p>	<p>34. Color syntax consists of the basic elementsthe designer</p>	<p>35. Assuming that the viewer has aand intensity.</p>	<p>36. Hue is the name of a particular color.another,</p>



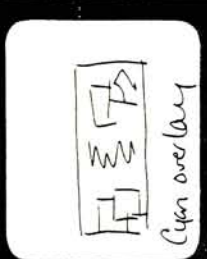


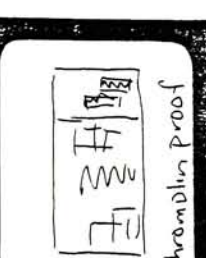
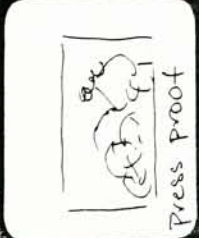
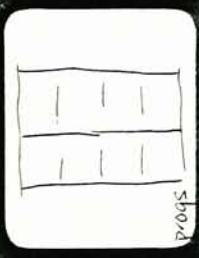



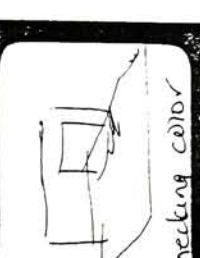

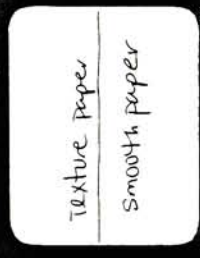
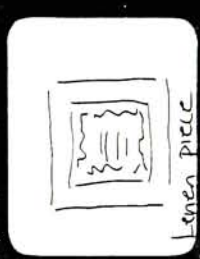
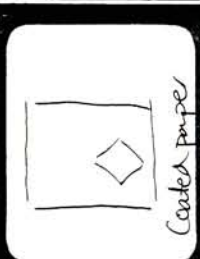


					
37. as red from yellow or green from blue or violet.	38. We can organize these hues in a color circle.	39. Value is the light- ness or darkness of a color.	40. Value has a direct relationship to theto white.	41. Intensity, also called saturation orcolor.	42. It is the quality of color by which wecolor.
					
43. We can think of it in terms of removingneutrality.	44. These three characteristics oftogether.	45. They give the designer an unlimitedchoices.	46.	47. To further under- stand color semanticsColor.	48. The first division is called Objectquestion:
					
49. What likeness or relationship is therethe object?	50. In this case the object is shown into see.	51. In these promotional brochures for thethe object.	52. In this ad for Hennessy Brandy thethe product.	53. The second division of color semanticsexperiences.	54. Ask the question, What are yourcolor?

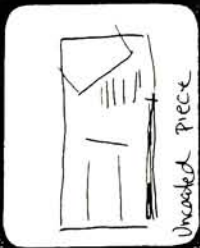
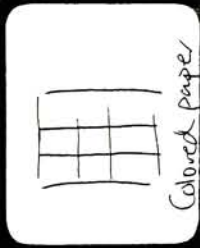
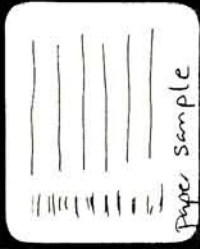

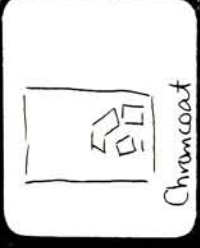

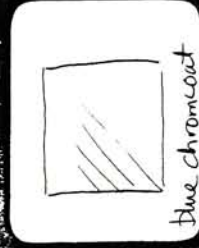
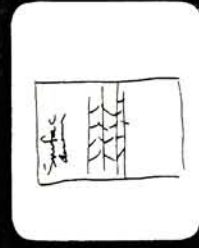
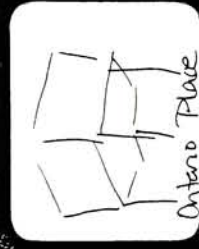





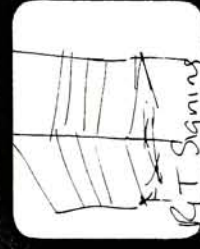



					
55. Color used suggestively becomes a toolin the viewer.	56. Most companies or institutions have anthe public.	57. Suggestive color can be used by thethe public.	58. In the program designed forthe store.	59. The boxes had no product identificationof color.	60. In this promotional piece for Appleproducts.
					
61. This brochure from Citibank projects thedependability.	62. At the time of the Bauhaus, suggestivesimplicity.	63. Primary color combinations withtypography.	64. By studying the emotional associationconcerns.	65. The third division of color semanticsrepresents	66. historically, politically,
					
67. culturally, religiously, or traditionally.be asked:	68. Are we making a symbolic relationshiprepresenting?	69. The logo for the supermarket chain,traffic light.	70. Another example of symbolic color useand logos.	71. The colors were derived from one ofof Texas,	72. where Lexaco was originally incorporated.



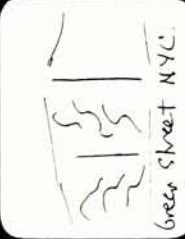
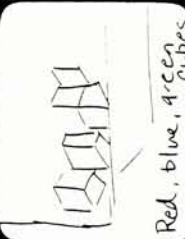


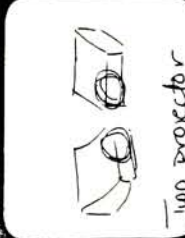


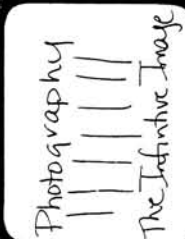
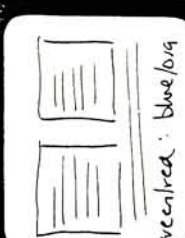

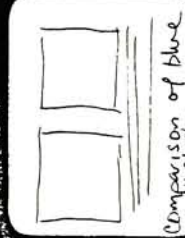
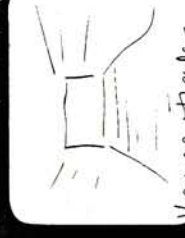

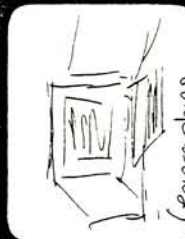
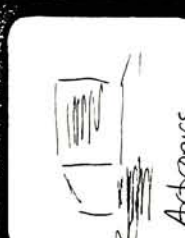

					
73. The use of red in this NO SMOKING sign is anmessage.	74. Designers should know that there arecolor.	75. For instance, a yellow color schemecountries.	76. It is crucial for designers to researchpredjudices.	77. If designers are not aware of theseof the country.	78. Symbolic Color is a powerful tool. Theconsiderations.
					
79. Color Pragmatics raises the questions:produced?	80. Printing is the action of reproducingprocesses	81. Commercially, three major processes arePrinting.	82. Each process has its advantages andconsiderations.	83. Offset-Lithography allows considerableand color.	84. Solid, unscreened imagery is a basic characteristic,
					
85. and allows for good quality in reproducing type.	86. Offset-Lithography is capable of reproduc-of a color.	87. Every image in Gravure printing isareas.	88. Therefore, it is wise to stay awayprocess.	89. The beauty of Gravure is its ability toprocesses.	90. Gravure is capable of quality colorlong runs.

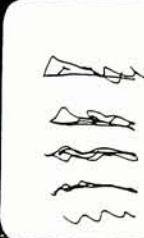






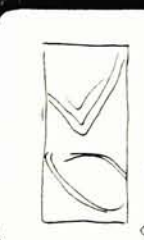



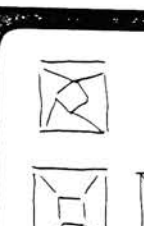
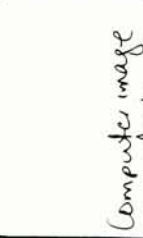
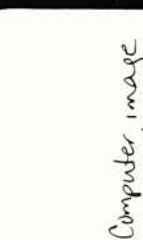

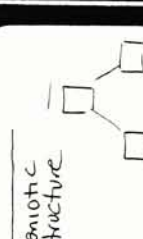

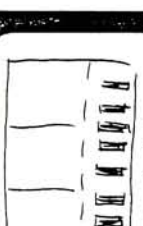
 <p>NY Sunday Times</p>	<p>91.</p> <p>For instance, the New York Times Sundayby Gravure.</p>	 <p>Screen Piece</p>	<p>94.</p> <p>A new screen must be prepared for eachthe design.</p>	 <p>Screen Piece</p>	<p>95.</p> <p>Because of the opacity of themediums.</p>	 <p>Screen Piece</p>	<p>96.</p> <p>Good communication between the designercolor.</p>	 <p>The Olympics</p>	<p>97.</p> <p>Screen Printing is used for threebanner work.</p>	 <p>Screen Piece</p>	<p>98.</p> <p>The designer must be prepared for eachthe design.</p>	 <p>Screen Piece</p>	<p>99.</p> <p>The inks used in screen printingoverprinting.</p>	 <p>Screen Piece</p>	<p>100.</p> <p>The designer and printer both find thehe is after,</p>	 <p>Screen Piece</p>	<p>101.</p> <p>Once the colors have been determined aprinting.</p>	 <p>Screen Piece</p>	<p>102.</p> <p>For example, an image can be printed solid at 100% color,</p>	 <p>Screen Piece</p>	<p>103.</p> <p>It is possible to achieve a wideone color.</p>	 <p>Screen Piece</p>	<p>104.</p> <p>A one color job means that the image isdesigner.</p>	 <p>Screen Piece</p>	<p>105.</p> <p>The one color refers to the ink color orof the paper.</p>	 <p>Screen Piece</p>	<p>106.</p> <p>Although not used today, the Colorcolor.</p>	 <p>Screen Piece</p>	<p>107.</p> <p>Flat color printing is described by thethe job.</p>	 <p>Screen Piece</p>	<p>108.</p> <p>screened between 5% and 95% color,</p>	 <p>Screen Piece</p>	<p>109.</p> <p>For example, an image can be printed solid at 100% color,</p>	 <p>Screen Piece</p>	<p>110.</p> <p>It is possible to achieve a wideone color.</p>
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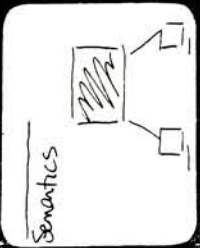

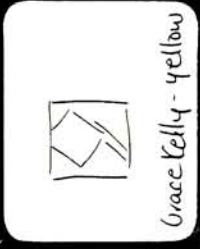

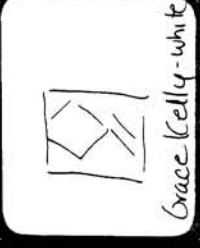
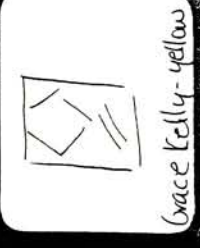


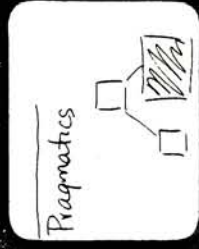

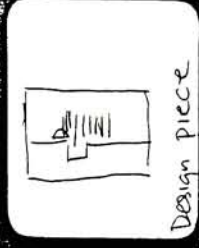





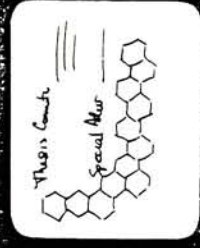
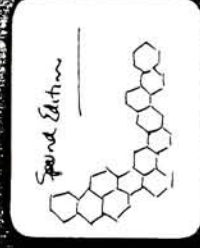
					
<p>109. or reversed and dropped out allowing the colorthe image.</p>	<p>110. In addition, the use of a colored papercolor job.</p>	<p>111. The addition of a second color providespossibilities.</p>	<p>112. Not only can the two colors be used separately.</p>	<p>113. but they can be combined as solidsof colors.</p>	<p>114. Varnish can be added to the printed pieceprocess.</p>
					
<p>115. In addition to increas- ing resistance topiece.</p>	<p>116. Varnish is also used to achieve specialvarnish.</p>	<p>117. Color tints may also be added to a varnish.image.</p>	<p>118. Four-color-process printing is theoriginals</p>	<p>119. such as transparenc- ies, color prints,paintings.</p>	<p>120. Four-color-process printing uses fourblack.</p>
					
<p>121. The four printed process colors appearimage.</p>	<p>122. Colors are created, not by a physicalfour colors.</p>	<p>123. Before the final job is printed, theacceptable.</p>	<p>124. The most simple proof the monochromaticjob.</p>	<p>125. This type of proof is used for simplerepresentation.</p>	<p>126. Designers also recieve proofs whichproofs.</p>

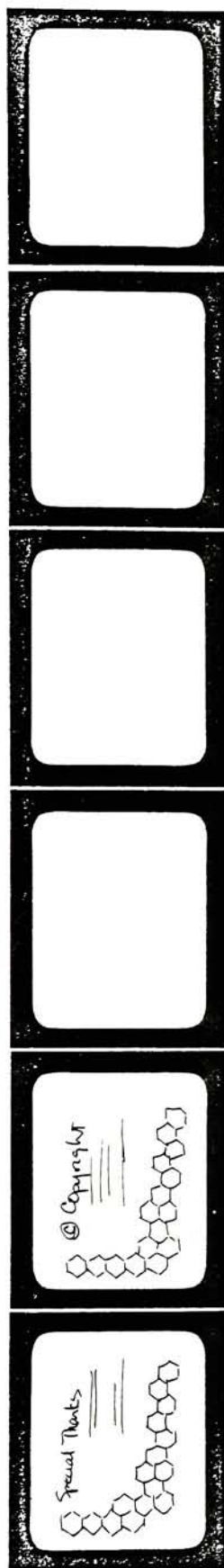
 Yellow overlay	 Magenta overlay	 Cyan overlay	 Black overlay	 All four overlay	 Chromalin proof
127. Color Key is an overlay system.	128. Here, each of the four separations areacetate,	129. Cyan overlay	130. Black overlay	131. when overlaid the designer is able toquality.	132. A Chromalin proof combines the colorsproof.
 Press proof	 Yellow proof	 Yellow + blue	 Web-checking Color piece	 Close up uncoated dots	 Close up coated dots
133. Press proofs are made directly from thejob.	134. Along with press proofs the designer "progs".	135. Progs consist of a number of sheets eachitself	136. and in combination with others.	137. Another accurate method of colorare made.	138. This method has the advantage of runningand paper.
 Paper sample	 Texture paper Smooth paper	 Linen piece	 Coated paper	 Half tone dots, and color rests on thedetail.	 Uncoated paper absorbs ink into thedots.
139. Paper has a large effect on the finalpaper.	140. An image which is printed on a smoothimage.	141. Here, the designer has chosen a linenperfectly.	142. Coated paper can radically affect anfibers.	143. Half tone dots, and color rests on thedetail.	144. Uncoated paper absorbs ink into thedots.

					
145. Yet if the designer is looking for a softchoose.	146. The color of the paper also affectspaper.	147. There has been a dye added directly topapers.	148. This type of colored paper can give addeddesign.	149. The second type of paper color issurface.	150. A good example is chromcoat.
					
151. Here a gloss color coating is applied tofinish.	152. Like other design considerations thedesigner.	153. The designer is concerned with manyfor instance,	154. an effective signage and graphics systemenvironment.	155. Carefully planned signs canenvironment.	156. Graphics in the form of murals, flags andto an area.
					
157. The sensitive designer is always aware of thedesigned	158. and the place where and the place wherecolors.	159. As a design element, color is essentialenvironment.	160. Colors for sign panels and copytogether.	161. Sign colors should relate to the colorsinstalled.	162. The line between signing and architecturalnon-existent.

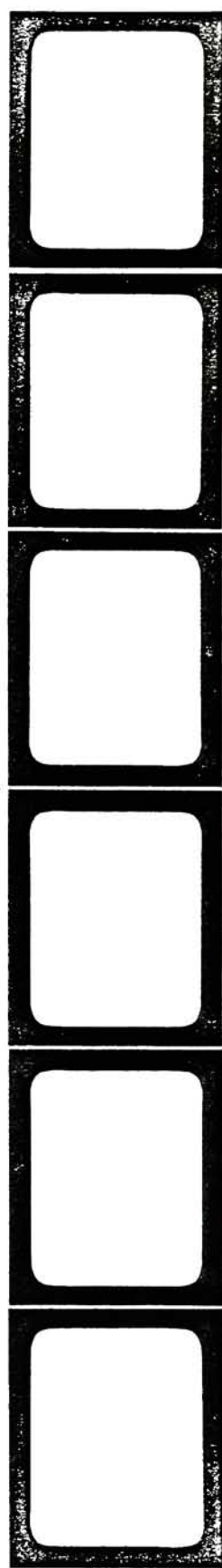
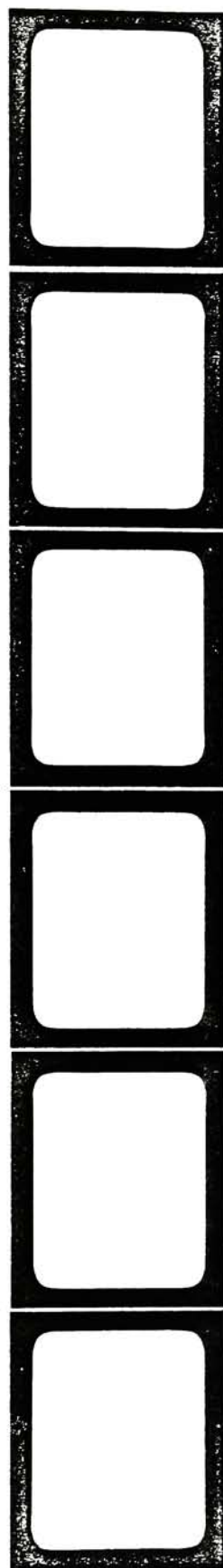
 <p>Man On The Street</p>	 <p>Brick Building</p>	 <p>Green Street NYC</p>	 <p>Red, blue, green cubes</p>	 <p>Lean's Comp. Mart</p>	 <p>14</p>
163. Some wall graphics can serve the dual purpose of color.	164. More commonly, architectural graphics focal point;	165. adding color or a sense of scale;	166. reinforcing the architectural design;	167. or supporting a thematic idea.	168. The use of color for its own sake has ignored.
 <p>Two projector</p>	 <p>Many arrows</p>	 <p>Light table slides</p>	 <p>Photography The Informative Image</p>	 <p>green/red: blue/gray</p>	 <p>gray/black: white/blue</p>
169. An audio-visual presentation is an projector;	170. or a complex multi-image show, creating matter.	171. But no matter how complex the presentation, considerations.	172. Legibility of the text slides depends reading.	173. For instance, red on green or blue on white or blue on white on blue are read.	174. but black on grey or white on blue are read.
 <p>Comparison of blue + violet</p>	 <p>Viewing Theater</p>	 <p>Computer System</p>	 <p>Genographics</p>	 <p>Artronics</p>	 <p>Apple Computer Graph</p>
175. The designer must also be aware that certain intended.	176. Color can direct a presentation. A progression.	177. Computer Graphics has opened a new in color.	178. For instance, the Genographics system colors,	179. and the Artronics system allows the colors.	180. As impressive as this might be, it can be graphics.

181.	 Butterfly progression	182.	 Blue / Grey	183.	 Red / Grey	184.	 Orange / Blue	185.	 Blue, red square	186.	 Orange / Brown			
There is no difference between color use atapply.	At the terminal, colors can be quicklymanipulated	allowing us to try many color combinationstime.	187.	 Computer image	188.	 Computer image	189.	 slides	190.	 printout	191.	 transparencies	192.	 plot.
The basic rules of harmony, balance,choices.	Once the designer has established hisart.	This is called hard copy output, such as slides,	193.	 Computer image Apple	194.	 Computer image Apple	195.	 Japanese poster	196.	 Semiotic Structure	197.	 Syntax	198.	 Rough sketches.
The designer must be aware of the fact thatart.	Therefore, the color and image qualitymonitor.	Color, because of its complexity, needs tovalidity.	199.		200.		201.		202.		203.		204.	

 <p>Semantics</p>	 <p>Grace Kelly - white</p>	 <p>Grace Kelly - yellow</p>	 <p>Grace Kelly - pink</p>	 <p>Grace Kelly - white</p>	 <p>Grace Kelly - yellow</p>
<p>199.</p> <p>With this list in hand we should look at theproblem.</p>	<p>200.</p> <p>With these semantic sketches the designeractress.</p>	<p>201.</p> <p>The final choice will be based on thecreatively.</p>	<p>202.</p> <p>Again, ask the question, What doesrepresent?</p>	<p>203.</p> <p>Is the color appropriate to thesituation?</p>	<p>204.</p> <p>and Why did we choose this color?</p>
 <p>Grace Kelly - pink</p>	 <p>Grace Kelly - pink</p>	 <p>Pragmatics</p>	 <p>Grace Kelly - Comp</p>	 <p>Design piece</p>	 <p>Channel - piece</p>
<p>205.</p>	<p>206.</p>	<p>207.</p> <p>Now that we have pinpointed our colorproductions.</p>	<p>208.</p> <p>In this comprehensive sketch the designerquality?</p>	<p>209.</p> <p>As designers we must remember that thesolution.</p>	<p>210.</p> <p>Color is the most complex, relative,design.</p>
 <p>Connectors - Connect</p>	 <p>Japanese design</p>	 <p>Blaze Travel</p>	 <p>Mobile Theaters</p>	 <p>Ther's Guide Special New</p>	 <p>Spand Edition</p>
<p>211.</p> <p>However, with consistent structuredcolor</p>	<p>212.</p> <p>and add a special sensitivity to their work.</p>	<p>213.</p>	<p>214.</p>	<p>215.</p>	<p>216.</p>



218.



APPENDIX I

Work Schedule Leading to the Thesis Exhibit

September 20, 1984	Thesis proposal submitted
September 28, 1984	Thesis proposal accepted
December 10, 1984	First Thesis Committee Meeting <ul style="list-style-type: none">-Review of thesis proposal-Set up of project time line-Review of brief outline
December 15, 1984	Distribution of second outline to all committee members reflecting thoughts of introduction of the semiotic structure. Beginning of work on the Genigraphics Computer System which produced all title and introductory slides.
January 9, 1985	Meeting with Dr. Zakia as a special advisor <ul style="list-style-type: none">-Revision of original thesis statement
January 21, 1985	Detailed outline distributed to all committee members including Dr. Zakia
January 23-25, 1985	Individual committee member meetings for reviewing the detailed outline. Collection of material for slides begins.

March 11, 1985	First draft of written script distributed to all committee members.
March 13-14, 1985	Individual meetings to review the script. Development of rough storyboard, forcing the organization of the slides with the script. Completion of Geni slides to be used for Cibachrome prints.
March 15, 1985	Genigraphics disk mailed to Genigraphics Corporation in Syracuse, New York.
March 18-19, 1985	Demonstration by Professor Weston Kemp (SPAS) of the Cibachrome color print process (direct color prints from slides).
March 21, 1985	Distribution of second draft of written script to all committee members. Individual meetings to discuss this draft of the script.
March 28, 1985	Meeting with Professor Remington and Watson to present a rough version of the entire presentation. (The recorded script with my voice and rough slide form)
March 30, 1985	Mailing of final disk of Genigraphics images to Syracuse for slide production.
April 4, 1985	Recording by Jurgen Wilson of narration and mix of music at WCMF Radio Station, Rochester, New York.
April 9, 1985	Thesis meeting for all members to hear completed narration and see timing of slides.

Aprill 11, 1985	Editing of audio tape by David Stone, (Instructional Media Services, RIT), and adding of synchronizing pulse tones.
April 17, 1985	Transfer of complete slide show to 3/4 inch video tape by IMS.
April 18, 1985	Show installed in Bevier Gallery, Rochester Institute of Technology, College of Fine and Applied Arts.
April 20, 1985	Thesis Show Opens
May 5, 1985	Thesis Show Closes

APPENDIX II

Production Difficulties

The production of this video tape required a considerable amount of technical knowledge. This was knowledge that I did not have at the beginning, and that I acquired by simple trial and error. Many of the technical difficulties could have been anticipated or even avoided if those ahead of me had documented their difficulties.

In the following pages of this Appendix, I have attempted to document the problems which I encountered. I hope that those who follow will find this account helpful. Although it would be impossible to anticipate all difficulties, I hope this account will highlight some of the areas of difficulty and encourage others to invest time and research to get the best quality video presentation.

Considerations When Shooting Slides

There are a number of important considerations when shooting slides intended for a video production.

First, all slides must be shot horizontally because of the television format (see Appendix III). Ideally, the image should completely fill the television screen. This creates the most aesthetically pleasing presentation. Yet, because many graphic images are design-

ed on vertical formats this becomes quite a difficult rule to follow consistently. Hence, it is a good procedure to utilize as much of the vertical television space as possible, so that the image does not get lost in the black space which naturally surrounds it. (Refer to the template which is included in Appendix III.)

The second consideration to keep in mind, is that video does not like intense red or white. Although it is impossible to stay away from these colors completely, they should be avoided as much as possible. Both of these colors tend to flare when transferred to video. This is particularly true with typography where the natural flaring which occurs causes difficulties in legibility.

The third, and perhaps the most important, consideration when shooting slides is achieving a consistent density level. The density level of a slide is the amount of brightness that is given off by each slide. This consideration is crucial when the show is transferred to video.

A video camera, like any other camera, has an iris which must adjust to the amount of light coming into it. If each slide in the show gives off a radically different amount of light, the aperture will be constantly adjusting. This will create many slides on the video that are washed out and have bright flaring or haloing effects. To achieve consistent density levels, it is suggested that each slide be shot at a consistent F-stop.

When my slides were produced I shot them at F-22. This seemed to work very well. I did not have a lot of aperture control problems with my show. The exception to this was with the slides from Geni-graphics Corporation. In these slides I had no control over exposure;

aperture corrections were made during production.

I cannot stress how important density control is to the quality of the video transfer. If this rule is not followed, the transfer will not be of acceptable quality, even to the most untrained eye. The simple fact remains, that the camera's eye cannot handle a vast range of densities.

Television Proportions vs. 35mm Proportions

There are fundamental problems with proportion when using a 35mm format as a medium for a television screen. The 35mm format has a base ratio of 2:3 and the ratio for TV is 3:4. This means that all artwork must be shot to fit into the TV ratio. Otherwise the artwork will get cropped in the video transfer. Furthermore, there are a number of essential dimensions of which the designer should be aware. These include TV scanned area, TV safe action area and TV safe title area. (For more detail see Appendix III.)

The most visible problem that I encountered with the TV proportion was with my work on the Genigraphics Computer System. I was aware of the dimensions of TV scanned area and TV safe action area but absolutely unaware of TV safe title area. It was not until all of my slides had been created that I came across a documentation by Kodak. (Refer to Appendix III.) Fortunately, there was time to adjust the slides, but it meant losing two weeks of computer time and making a lot of needless corrections and adjustments.

Mounting and Masking Slides

The next major technical problem came only three weeks prior to the production date. I went to Instructional Media Services to make an appointment to have my show transferred to video. I had remounted all my slides into Kodak cardboard mounts because the majority of them needed to be masked.

IMS informed me that two hundred slides would need to be remounted in TV crit glass mounts. Apparently, the cardboard mounts tend to warp when heated, causing them to get caught in the projector.

Luckily, although it was quite a set back at the time, I found out that in addition to remounting all the slides I would also need to remask them. When masking I had used silver mylar tape. What I did not know was that silver mylar is not completely opaque when projected. The slides should have been masked with aluminum tape which is completely opaque when projected.

Narration

The problems that occurred with the narration were probably the most frustrating of all. I went to talk to the audio technician three weeks prior to when I needed the audio completed. At this time I listened to voices and decided on Jurgen Wilson. The technician informed me that he could not begin my audio until April 10, only six working days before the show was to be installed. In addition, he could not guarantee that the audio would be done in time for the show. Needless to say, I began to look for another way to get the

audio track recorded.

A fellow graduate student told me that Jurgen was working at WCMF Radio Station. That same day I called Jurgen and explained the trouble I was having. He agreed to produce the audio track, including narration and mixing of the music. He could use the facilities at WCMF. We met at school and I explained the script. He did not feel that it was necessary for me to go with him to do the taping, so I left him on his own.

I had the tape back in two days, but when I brought it home I found that some of the narration became run on and too fast for the slides. Definitions between paragraphs were lost and, more obviously, so were pauses between subject changes.

In a meeting with my thesis committee members, it was decided some of the tape would need to be edited to create a more pleasant pace for the viewer. Fortunately, the audio technician at Instructional Media Services was able to do this editing without much difficulty.

Pulsing the Audio Tape

The most efficient way to run a slide show is by adding synchronized pulse tones directly to the audio tape. These are tones which mechanically advance the projectors so that there is no way that the show can be altered from the original production.

These tones work through a dissolve unit. The unit that I used is called a Clear Light Micro-Diamond Dissolve I. It allows the slides to gently fade from one into another. This particular unit has five different types of dissolves. They are as follows:

1. cut: this creates a split second change with no dissolve
2. a one second dissolve
3. a two second dissolve
4. a four second dissolve
5. an eight second dissolve

The Micro-Diamond unit is capable of giving a number of interesting effects. My regret was that I had not checked one out earlier to get a feel for the different effects. To rehearse timing I had a simple Kodak dissolve unit which had no options in dissolves. I had no idea of the complexity or differences in units.

I was shocked when it came time to add pulses and I was faced with these options in dissolves. It took one full run through the show before I got the feel for the different effects that the various fades could give. It actually took three times as long to do the show because of this. In fact, I never got to see the results of the last and final run through until the day it was transferred to video. The technician ran out of time and, I think, a bit of patience.

Transfer to Video

The one factor which made my video transfer successful was that I knew the sequence of my slides by heart. This allowed me to prepare the technician for any bright or dark density level slides. He, in turn, could then manually adjust the aperture of the camera to avoid any flaring which might have occurred.

The main regret that I have in the transfer to video is that because the number of slides that I had required four slide trays, three-quarters of the way through the production, the show had to be stopped and the trays switched. Hence, on the video tape this

transition needed to be edited and therefore is not as smooth as I would have liked on the final production.

If I had anticipated this I could have pulsed the tape to automatically switch from trays one and two to trays three and four. This would have created a smoother and more natural dissolve instead of the abrupt video edit.

APPENDIX III

Television Graphics Production Template

The following pages of the Appendix include documentation published by the Eastman Kodak Company. This documentation includes an illustration which shows the TV Critical areas in relation to a 35mm slide format.

I would encourage all those who are developing a slide show for video to write to Kodak and acquire a set of these guidelines. I found it absolutely essential in all of my copy work as well as the work done on the Genigraphics Computer System.

HOW TO USE THE TELEVISION GRAPHICS PRODUCTION TEMPLATE



H-42b

The Production Template is designed to facilitate the preparation and evaluation of graphics for television transmission systems. Its dimensions are based on American National Standards PH22.8* and PH3.43† and on Society of Motion Picture and Television Engineers (SMPTE) Recommended Practice RP27.3-1972.‡

STANDARDIZING ARTWORK FORMAT AND SIZE FOR TELEVISION TRANSMISSION

The most commonly used artwork mount is 10 x 12 inches (254 x 305 mm). In connection with work prepared for television, this custom particularly applies to the use of acetate cels and has acquired nearly universal acceptance by filmmakers, artists, photographers, and graphic arts personnel.

Based on the 10 x 12-inch (254 x 305 mm) format, the template gives, to a high degree of accuracy, the relative sizes of areas used primarily in and for television systems—namely, those of the 16 mm motion picture and the 35 mm slide. It also shows the 16 mm/35 mm relationship when the indicated areas are used at the magnification represented.

Each limiting area shown on the template is labeled for the specific use for which it was designed. Starting at the center and working outward, they are: *TV Safe Title Area*, *TV Safe Action Area*, *TV Scanned Area*, *16 mm Motion Picture Information Area*, and *35 mm Slide Information Area*. The design of the template, using the 10 x 12-inch format, places all elements on center for both the vertical and horizontal dimensions.

TV SAFE TITLE AREA

The innermost broad gray line frames the *safe title areas* (RP27.3-1972) and shows the format and size (in the correct aspect ratio) for both 16 mm motion

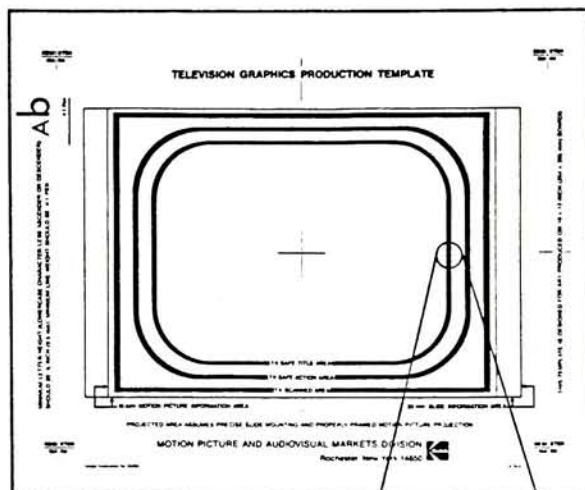


Diagram showing use of INNER and OUTER EDGES of "frames."

pictures and 35 mm slides. The *inside edge* of the gray frame (see diagram) represents the title area for 35 mm slides, while the *outside edge* shows the 16 mm motion picture title area. Titles or other artwork designed in accordance with RP27.3-1972 will fit into these areas and thus be visible on the majority of home television receivers.

TV SAFE ACTION AREA

The next larger gray frame contains the *safe action areas* (RP27.3-1972). Again, the inner and outer edges match the 35 mm slide and the 16 mm motion picture formats respectively. Visibility of all significant artwork, animation, and motion picture action can be expected on the average home receiver if such material is designed to fit these areas.

TV SCANNED AREA

The largest of the three frames defines the two image areas that are electronically scanned by the television transmitting system. It is consistent in representing the 35 mm slide at the inside edge, and the 16 mm motion picture area at the outside edge of the broad gray line. The projected image area visible

*PH22.8—*Dimensions of Projectable Image Areas on 16 mm Motion Picture Film*, American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10036.

†PH3.43—*Dimensions of Projector Slides*.

‡RP27.3-1972—*Specifications for Safe Action and Safe Title Areas Test Pattern for Television Systems*, The Society of Motion Picture and Television Engineers, Inc., 862 Scarsdale Avenue, Scarsdale, New York 10583.

on the slide or motion picture film beyond this largest shaded frame is not ordinarily scanned, transmitted, or viewed in the television system.

MOTION PICTURE AND SLIDE FORMATS

The last two (and largest) areas, shown on the template in outline only, represent the apertures of the 16 mm motion picture *projector* and the 35 mm slide *mount* and are shown having a common height. The single height of these two formats makes the template easier to use without any loss of its technical advantages. Based on current ANSI and SMPTE practices, a common height also allows for a more convenient determination of the other template dimensions and is the foundation for the clean working appearance of the entire design.

LEGIBILITY AND TELEVISION

A rule of thumb generally accepted among those producing projectable material concerns legibility and the maximum viewing distance for anyone in the audience. This rule simply states that the projected material should be legible for the farthest viewer, who is seated 8 times the projected image height (expressed as 8H) from the screen.

Since television images are frequently viewed at distances greater than 8H in the home or in a classroom, legibility requirements for these comparatively greater viewing distances must be considered. The left end of the template indicates the letter height and minimum line weight desirable to make titles that can be read easily by the majority of television audiences. However, you may wish to experiment with both larger and smaller type to decide which size is best suited to your particular needs. Where possible, it is recommended that finished artwork be reviewed both in color and black-and-white on the telecine chain before being broadcast. This procedure will indicate any changes in the artwork (letter size and weight, contrast, separation of tones, and color) needed to make it acceptable for broadcasting. If previewing is not practical, the artwork must be created to take these

elements into account. One color that reflects or transmits the same amount of light as another color will cause the two colors to appear as the same neutral tone on a black-and-white television receiver.

It is also considered good practice to extend the *good* or *neat* area of all artwork 1 inch (25 mm) beyond the information area. This helps to prevent background edges from showing in the picture being transmitted and allows the camera operator a little freedom in positioning the artwork in the camera's viewfinder.

If the artwork is to be used for both TV transmission and regular projection, the lettering and title area should be designed to meet the TV requirements. When the material is being photographed for a projection slide, an extreme close-up can be made so that unnecessary background will be eliminated.

REGISTRATION

A register mark is provided in each corner to aid in positioning the template accurately over the artwork. However, to obtain more accurate and efficient use of the template, you may want to have one (or more) of the edges perforated with a precision register punch.

MORE INFORMATION

Kodak supplies a variety of publications, including several that contain helpful information on the preparation of effective audiovisual presentations. Some of them are:

- S-11 *Audiovisual Planning Equipment*
- S-30 *Planning and Producing Slide Programs*
- S-22 *Effective Lecture Slides*
- S-24 *Legibility—Artwork to Screen*
- H-40-1 *VIDEOfilm NOTES—Color Slides for Television*

Prices and ordering information for these and many other Kodak publications are included in L-5, *Index to Kodak Information*. Write to Eastman Kodak Company, Dept. 412L, Rochester, N.Y. 14650, for a free copy of the *Index*.

VIDEOfilm NOTES is a trademark.

MOTION PICTURE AND AUDIOVISUAL MARKETS DIVISION
Rochester, New York 14650

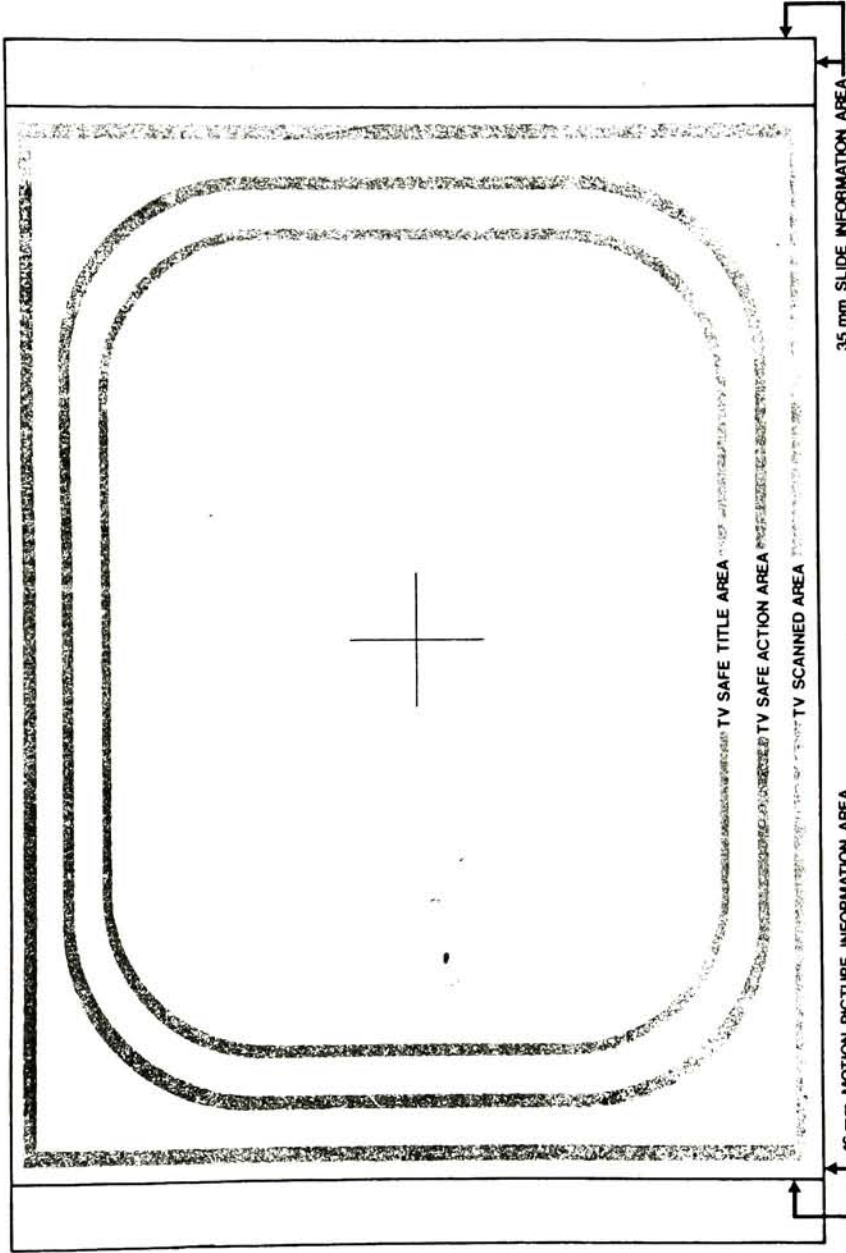
REGI STER
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TELEVISION GRAPHICS PRODUCTION TEMPLATE

Ab

#1 Pen

MINIMUM LETTER HEIGHT (LOWERCASE CHARACTER LESS ASCENDER OR DESCENDER) SHOULD BE 3/8 INCH (9.5 mm). MINIMUM LINE WEIGHT SHOULD BE #1 PEN.



THIS TEMPLATE IS DESIGNED FOR ART PRODUCED ON 10 x 12-INCH (254 x 305 mm) BOARDS.

PROJECTED AREA ASSUMES PRECISE SLIDE MOUNTING AND PROPERLY FRAMED MOTION PICTURE PROJECTION.

REGI STER
MA RK



MOTION PICTURE AND AUDIOVISUAL MARKETS DIVISION
Rochester, New York 14650

Kodak Publication No. M-42a

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REGI STER
MA RK

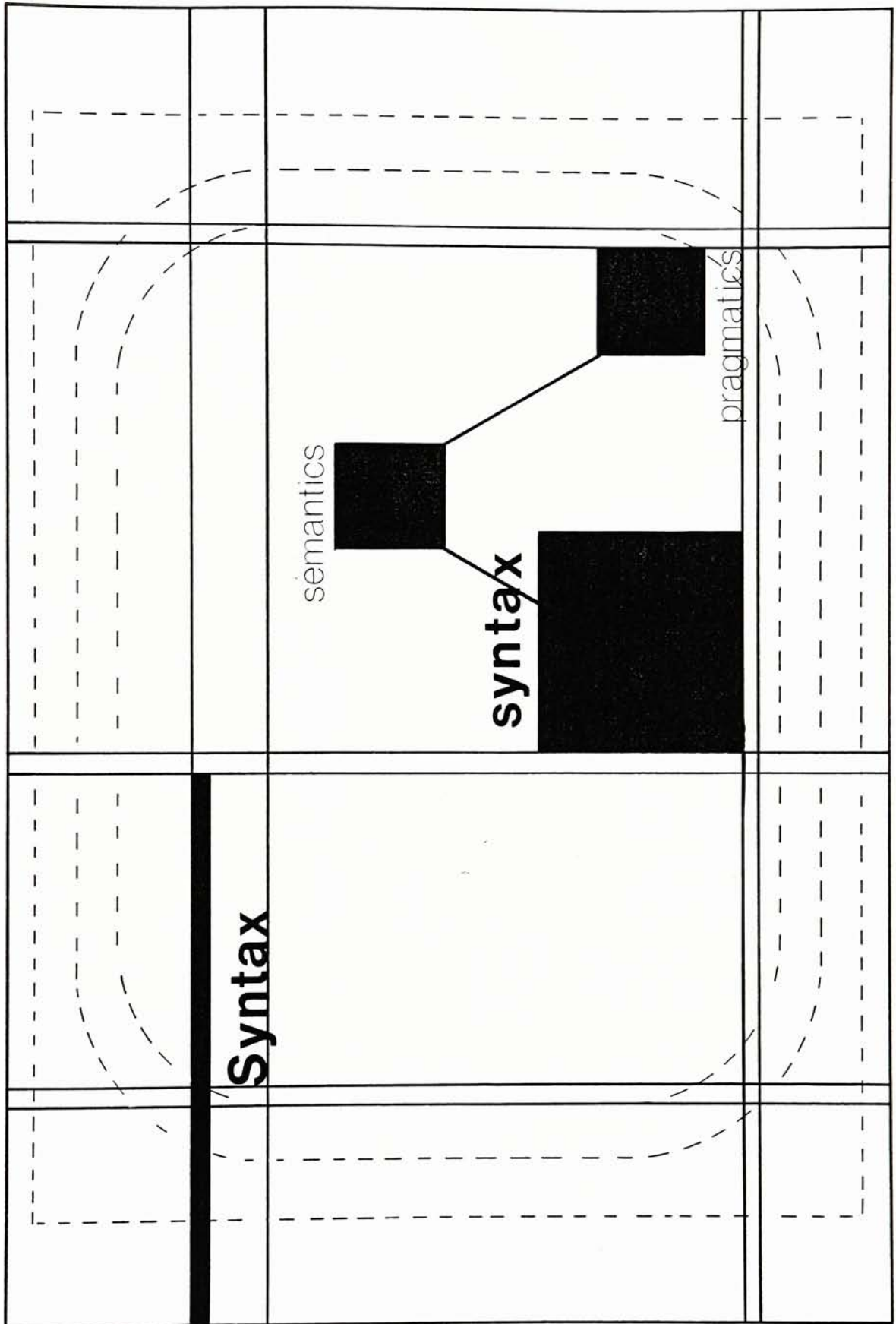
APPENDIX IV

Introductory Text Grid

The production of this video tape required that a number of introductory slides be created. I chose to use the Genigraphics 100c Computer System to produce these slides. This system is based on a 35mm format and its hardcopy output can be in the form of a 35mm slide transparency.

As mentioned in Appendix II, the 35mm format is based on a 2:3 ratio. Therefore, a grid needed to be created which would compensate for the 3:4 television ratio. This ratio consideration was particularly important in creating these slides, because they were intended to carry instructional information.

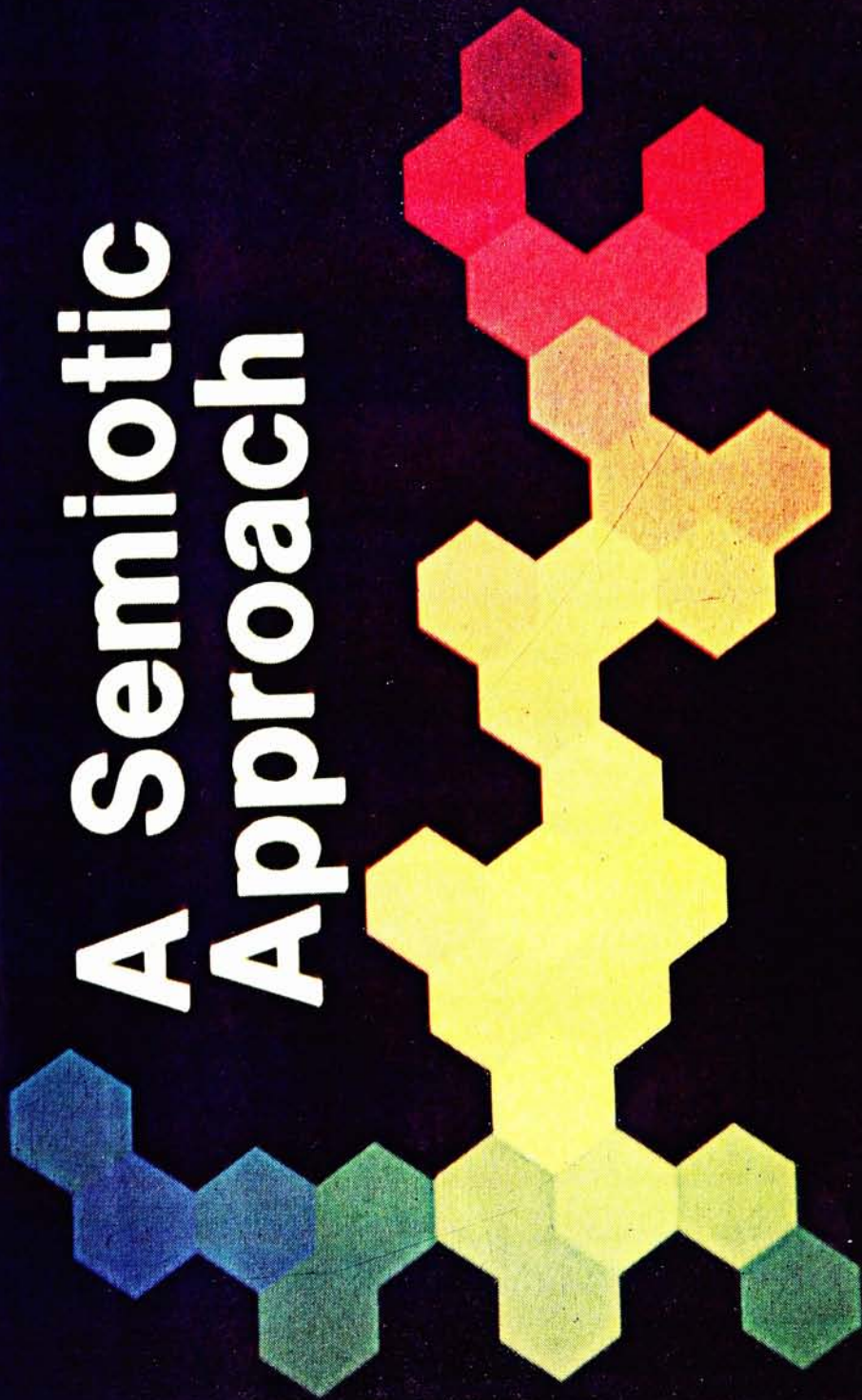
The following pages contain the grid used to assure proper and consistent placement of type, rules and illustrations. In addition, I have included a number of color copies which have been made from the original 35mm slide.



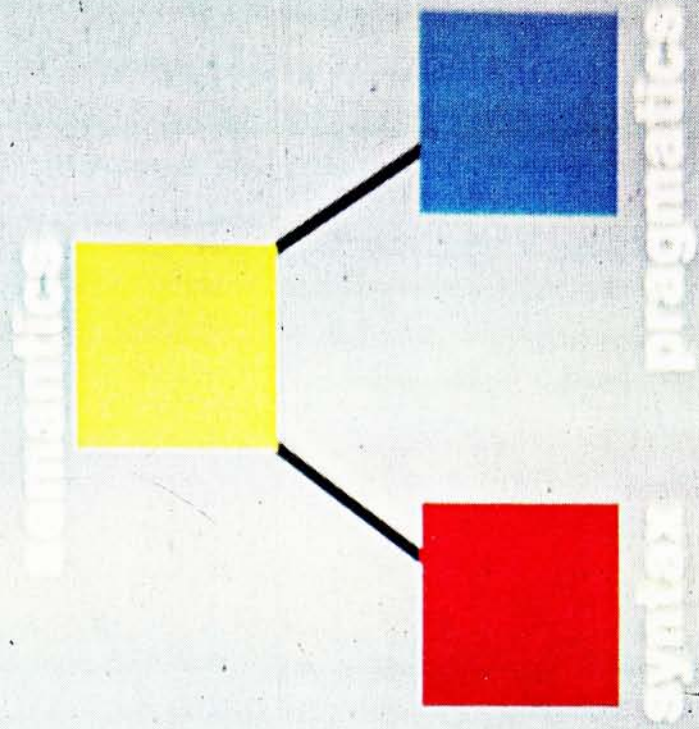
Color



A Semiotic Approach



Semiotic Structure



Syntax

semantics

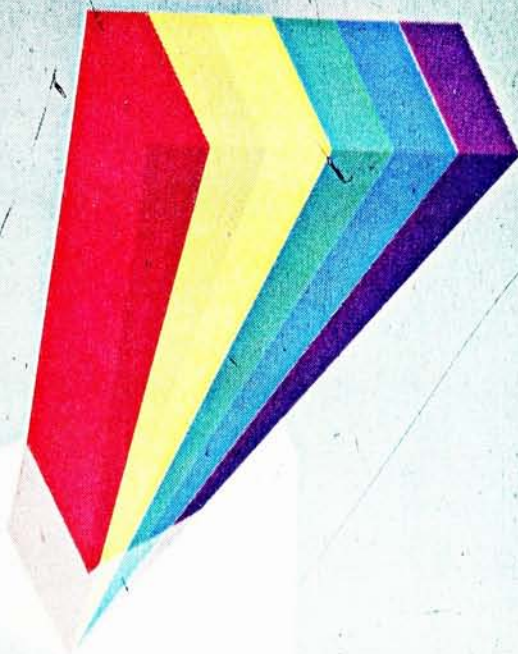
pragmatics

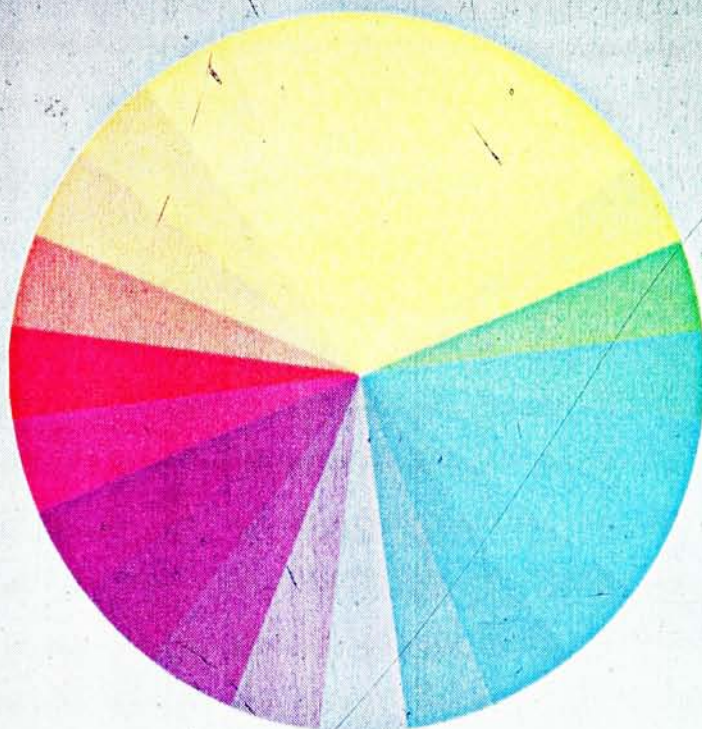
syntax



Visual
Spectrum

sunlight





Hue

FOOTNOTES

¹Massimo Vignelli, "Chromotype & Connotations", paper presented at the Applied Semiotics for Design Conference, Rhode Island School of Design, Providence, RI, 6 June 1983.

²Stephen A. Kliment, Creative Communication for a Successful Design Practice, (New York: Whitney Library of Design, 1979).

³Massimo Vignelli, "Chromotype & Connotations", paper presented at the Applied Semiotics for Design Conference, Rhode Island School of Design, Providence, RI, 6 June 1983.

⁴Ibid.

⁵Margaret Walch, "Color Symbolism in Multi-National Companies", American Fabrics and Fashions, no. 126, 1982, pp. 52-53.

⁶Interview with Nigel Holmes, Time Magazine, New York, New York, 20 March 1985.

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1928.