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ABSTRACT

Lines are elemental design devices that provide the primary structure for visual expressions in printed media. Gestalt principles of perception emphasize the role of the viewer, so the energy of the lines and the commercial viability of a particular design depend upon the designer's and photojournalist's understanding of both the viewer's programed response to lines and his or her mental set. Although the roles of intuition and "previsualization" are debated, the mechanical nature of mass media and the common link of realism probably make previsualization more important for the designer and photojournalist. The complex relationship between form and content that results when photographs are printed in the mass media depends upon cropping as well as upon lines and shapes. Framing is nothing more than the lines that mark the border between artifact and environmental space or image and border. Lines are also the primary tool of previsualization, and necessary in the creation of three dimensional effects. As physical events, lines represent a balancing of compositional forces, and they can also be perceived temporally. Although photojournalists discover lines while designers create them, students in both disciplines can benefit by instruction in their use. (A slide presentation outline is appended.) (JL)

VISUAL COMMUNICATION DIVISION

STICKS AND STONES ARE BONES:

THE ECLECTIC USE OF LINES

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STICKS AND STONES ARE BONES:

THE ECLECTIC USE OF LINES

A pundit with tongue in cheek once described the Americans and British as being one people divided by a common language.

Until recently, it seems that graphic design and photojournalism teachers shared the same problem. Although we use the same visual alphabet and communicate in visual languages that differ more in idiom and pronunciation than roots, we let specialization become a language barrier. Now, in the spirit of journalistic eclecticism, we find that the walls have become thin and artificial, and we feel that it is important to teach the other community's visual syntax.

This paper and companion slide presentation will explore the use of lines, a common element in the visual alphabet of graphic designers and photojournalists. Looking specifically at magazine design and examples of the author's landscape and photojournalistic images, this submission will show how lines are elemental design devices that provide the primary structure for visual expressions in printed media. It will develop the argument that composition, Gestalt principles of perceptual organization and the laws of Newtonian and quantum physics are united through the use of either visible or invisibly sensed lines. Then, after synthesizing theories of graphic design and photography into a larger visual communication perspective, this paper will suggest how graphic design and photojournalism students could develop a stronger foundation in both disciplines, and an intuitive grasp of visual structure in all media, by learning to "see" and use lines.

Lines are the "sticks" of composition. The "stones" are points and shapes, and it should be remembered that shapes are nothing more than lines that turn back upon themselves. Together, they are the "bones" or structure of all compositions and provide the skeleton upon which content is tacked and from which meaning is shaped and inferred.

Lines are almost the simplest visual design devices. Only points are more fundamental, and by definition, points are dimensionless and visible only when they are strung together to form lines. It is the line, then, that provides a staging area where graphic designers and photojournalists can assemble for their combined journey.

Areas of commonality

Of course, there are other areas of commonality in the visual communication of designers and photographers, and all these areas should be explored as we begin to develop a body of knowledge that links visual communicators. Some of these areas exist by themselves and have little bearing on this discussion. However, because lines are so fundamental to visual expression, other areas of commonality often will have an effect on how lines are either displayed or perceived.

To begin with, Gestalt principles of perceptual organization tell us how large, heterogeneous groups of people will react to visual structure in printed media. Viewers order visual stimuli by grouping them according to their proximity, similarity, continuity or ability to effect closure. Unless an isolated visual element extraordinarily dominates a composition, as large shapes sometimes do, viewers will first look to lines as a means of ordering visual data. Moreover, this grouping will be influenced by time as well as space. For instance, a viewer will group lines according to their proximity in temporal sequence, as well as how close together they are on the page or in a photograph. Inevitably, this space/time relationship will create a physical dynamic.

Each line in a composition will possess a degree of energy. Verticals and horizontals, because they represent a stasis that resolves the law of gravity, are the most stable lines. Moreover, because people are programmed to seek order in visual environments, according to Gestalt psychologists, they also intuitively create two lines in all compositions, vertical and horizontal axes

that divide the field into four equal quadrants.

As lines move away from true verticals or horizontals, their energy levels increase. "More generally, oblique direction can be defined dynamically as a gradual withdrawal from, or approach to, the zero-positions of the vertical or horizontal."[1] Because they have higher energy levels, oblique lines have more visibility, especially if they are placed close to areas like the vertical and horizontal axes that already have a strong attraction for the eye.

Rudolph Arnheim says that all compositions have a relative energy level that is the sum of the points of attraction in the composition.[2] Correspondingly, grouped lines have a collective energy level that exists separately from their individual energy levels. Because lines are so fundamental and prominent in compositions, their collective energy level is amplified. They are elements of attraction that Arnheim suggests must be recreated in a visual field in the viewer's brain.[3] Wary of the phenomenon of information overload, visual communicators in mass media have to select and cause groupings of lines that will not demand too much expenditure of perceptual energy in the viewer. Otherwise, there is the risk that the viewer will instantaneously decide that comprehension of structure will take too much of his time and energy, and he will expend that effort on less complicated visual fields in competing media.

Gestalt principles of perceptual organization, then, force both designers and photographers to consider the commercial environment in which we must labor. Quick unemployment would be the reward of the visual communicator who felt that his artifacts existed by themselves and only had to reflect his personal tastes. Instead, we have to keep the receiver in mind. We do not create for ourselves. Following the Law of Prägnanz, we try to force a perceptual organization or good gestalt that reflects the prevailing economic, social and environmental conditions. Good art in mass media means finding the simplest possible order of visual data in compositions, yet an order that is not so simple that it lacks vitality and

bores the viewer.[4] Too much order deprives a person of the creative act of participation.[5]

Visual communicators must strike a balance between theme and commercial environment. Inevitably, this balance will be determined by the physics of the marketplace. Magazines, especially, have individualized marketing thrusts. The physical realities of competing electronic forces, acceleration of new titles, and newsstand gravitational pull have compelled magazines to specialize. The designs magazines use and the photographs they select reflect their adaptations to prevailing marketing dynamics. Compositional lines, then, must reflect those balances and accommodations. Because its formula depends upon formalism and scholarly stability, Scientific American, for instance, would avoid asymmetry in design and would lean toward illustrations that provided symmetrical balancing of lines.

The commercial environment and communication model that stresses the target receiver also force graphic designers and photojournalists to consider the possible mental set of the viewer. Gestalt psychologists say that perception is influenced by a person's experiences, both immediate and over time. The critic John Berger says that memory precedes and shapes the percept.[6] Minor White calls this phenomenon "equivalence in a photograph."[7] He means that a photograph exists on three levels. On the first level equivalence is a graphic function, the visible foundation or structure that the photographer chooses to be an equivalent for something else—a person, an emotion, a time, a place. On the second level equivalence relates to what goes on in the viewer's mind when he sees something that generates a knowledge of himself. On the third level White says that equivalence is the inner experience a person feels when he remembers the photograph and the personal knowledge it generated.

To complicate matters, even if the designer or photographer could know the mental set of the receiver and the single and collective memories of all viewers,

he still would have to have a picture of the viewing environment to effectively communicate. Gestalt psychologists also suggest that a person's perceptions are influenced by other stimuli in the vicinity. This means that lines used in compositions in printed media will have to be more prominent or easily seen than they would have to be in a slide presentation, where the surrounding darkness focuses the viewer's concentration and deletes potentially distracting influences in the viewing environment.

Intuition versus previsualization

A second common area that binds designers and photographers and which forces another delicate balancing act is the relationship between intuition and previsualization. The former is the home of ideation and creative spark. The latter refers to the visual representation of an idea. Just as memory has an effect on how an individual designer or photographer may "see" something, the commercial environment helps to shape the previsualization. For instance, a freelance photographer gathering images of aspens for eventual publication in Smithsonian and Camera 35 magazines would be sure to balance his individual reaction to the geometry of the trees with the needs of his anticipated markets. He should respond to the subject matter first, but he would be sure to later choose compositions with stable, studied verticals for Smithsonian, while providing pictures with more stylized lines for Camera 35.

The argument for primacy of intuition or previsualization is a spirited one. The landscape photographer Paul Caponigro says,

> When I'm out in nature, I respond to emotional stimulus which determines what and when I photograph. I can get excited about a cloud moving over a group of rocks and think, this could make a beautiful arrangement, but I don't always trust my thoughts of arranging or composing. When I recognize a potential picture, I don't waste a second thinking about the position of objects. Sometimes I literally guess where the image will appear on the ground glass and shoot. I work fast, thinking all the while. Who can guarantee us

> anything for all the thinking and feeling? Who is such a total master that he's going to get precisely what he expects? There are too many variables in the overall process.[8]

On the other hand, the designer and teacher Donis Dondis says, "Sudden inspiration, mindlessness, is not an acceptable force in design. Careful planning, intellectual probing, technical knowledge are necessities in visual pre-planning and design."[9]

For people who create for mass media, emphasis probably should be placed on previsualization. Ours is a discipline that relies on tools—camera, enlarger, T-square, press, etc.. Neither graphic designer nor photojournalist has complete control of his product. All of us are part of a larger mechanical process. Eventually, other production people will take our artifacts and make them physically manifest for the target audience. So, it is important for graphic design and photojournalism teachers to make sure that their students understand the mechanics of reproduction. The incipient designer or photographer must be able to previsualize not only the final product, but the labor-intensive operations that must be performed to make that intuition a reality. In turn, the resolution of lines can be no finer than that provided by the process photographic step.

All graphic designers and photojournalists are bound by a common link to realism. Graphic design is concerned with the creation of a tactile object, and photojournalism is the process of taking a story and making it visually real. However, abstraction is also a component of every artifact we create. Lines, in particular, can be isolated and later drawn out of the composition, just as they are fundamental devices that are designed first. Moreover, lines in their abstract, non-representational state often influence and control the primacy effect of realism. By themselves, lines can have meaning, and in their abstracted placement, interactions, and energy levels, they can help shape the perception that the viewer has when he looks at the content, the real, pictorial image.

Inevitably, as we consider the links between graphic design and photojournalism,

we will come to a discussion of form versus content and structure versus aesthetics. In those differentials it is usually supposed that form and structure contain, imply or display content and aesthetics. But in our exploration of commonalities in visual communication, the relationships are more complex. For instance, form and content will interact within an individual photograph. But on a second level, form and content must be analyzed in terms of groups of images. Truthfulness and realism demand that each part contributes to the meaning of the whole. The photographer Lewis Baltz puts it this way:

> My own solution to the problem of the veracity of photographs is to make the series and not the single image, the unit or work. Grouping photographs allows points to be raised, asserted through repetition, criticized and restructured into sub-categories; in short, a coherent visual syntax can be developed to show a number of facets of the same general subject.[10]

In photojournalism we promote this perspective, calling it fairness, objectivity and balance.

When the photojournalistic image is printed in a mass medium, the relationship between form and content becomes even more complex. We can talk of single images of groups of photographs, but there is a hierarchy of visual ordering that says that photojournalism is only an element of a larger entity. In news magazines groups of photographs must be sequenced with copy, heads and other illustrations into a design that has structure and meaning, a meaning that is partially generated, and wholly facilitated, by that structure. In other words the photojournalistic image must be a part of the larger graphic design gestalt, and lines are often the tool used to combine the pictorial and the architectonic.

If lines and shapes are the guiding agents for grouping in layout, cropping is their steward. It is the boon of the graphic designer and the bane of the photojournalist. While some would argue that there is nothing to be gained by cropping through the enlarger,[11] or that the very premise of cropping means that there can be no composition in photography,[12] the photojournalist must be

taught that, for his artifacts at least, cropping is a phenomenon that must be considered in the compositional balance. Often times, we have to crop to ensure that structural lines within the photojournalistic image support the visual flow of the spread. Unity of the whole page or spread is the ultimate point in the design hierarchy, "and a photographer can scarcely be too appreciative of the layout man who gives his work a beautiful presentation of a kind which keeps the full import of the story; a display in which the pictures have spatially correct margins and stand out as they should; and in which each page possesses its own architecture and rhythm."[13]

Lines in framing

The architecture of a magazine spread or a photojournalistic image is determined by its frame. A frame, in turn, is delineated by the perimeters of the artifact or image area, and perimeters are nothing more than lines that mark the separation between artifact and environmental space or image and border. A frame also will have a certain proportion that must be considered when composing visual elements within that space. Traditionally, the rectangle has been the preferred frame in graphic design and photography. This is partly due to historical necessity. The right angle and rectangularity have predominated in design because of the printer's em quad and foundry lock-up of type in letterpress printing.[14] Also, it is no coincidence that the format of most magazines and films are the same. Both provide a rectangular frame in the usual ratio of 2:3, a so-called natural proportion incorporated as the golden rectangle by Ictinus and Phidias in the Parthenon and as the golden mean by Da Vinci and Le Corbusier in their human and architectural designs.

Although there is little variation in the proportions of film formats, and although most photojournalists use 35mm film, framing in photography provides almost endless possibilities. A photojournalist is limited only by the camera-to-subject distance, angle of view, and the number of lenses of varying focal lengths

in his gadget bag. In layout the frame is also the initial design consideration. The designer, not tied to film formats but influenced by standard paper sizes, first determines the size and proportion of the printed piece. That becomes the fixed frame. Like the photojournalist, the designer has an empty space that must be divided and filled. Within that area the designer can manipulate the size, dimension and perspective of visual elements, just as the photojournalist uses lenses, to force a certain compression of space and an interrelationship between the points of attraction in a composition.

Lines: the primary tool of previsualization

> The lens sees as the eye sees in complete detail, fully reinforced with all of the visual elements. All of which is another way of saying the visual elements are richly present in our natural environment. No such completeness of replication of our visual setting is present in the beginnings of visual ideas, the plan, the rough sketch. Previsualization is dominated by the simple, spare, yet highly expressive element of line.[15]

Lines are the primary tool of previsualization. In this vein they are conscious, cognitive devices. But in another sense lines are felt, not learned. We can say, then, that lines should be intuitive in their formation but should be analyzed in their relation to the whole.

Piet Mondrian, the Dutch abstract painter, had a pivotal effect on the growth of modern graphic design. Before the development of his philosophy of Neo-Plasticity, most design relied on the formal balance of symmetry. But Mondrian maintained that the task of art is to destroy static equilibrium and create dynamic equilibrium in its place.[16] Only through pure construction, he believed, could a composition resonate with a universal harmony that would be vital and understandable to everyone, irrespective of cultural differences. To accomplish this, he devised a method of design whereby forms are balanced asymmetrically by counterpoising their visual weights and relying on the construction of a rhythm of mutual relations or free lines.

But he realized that in order to effect this plasticity, there would have to be an overriding stability through the use of dimension. He chose the rectangle, again, as the preferred medium. "Through the clarity and simplicity of neutral forms, non-figurative art has made the rectangular relation more and more determinate until, finally, it has established it through free lines which intersect and appear to form rectangles."[17]

Mondrian used lines to divide compositional space within a frame. Then, in the later stages of his art, he would fill in some of the rectangles with pure, primary colors. Balance would be achieved by juxtaposing the size of the color, its placement, its hue and chroma with other colors in the asymmetrical composition.

Magazine designers, influenced by Mondrian and his assimilation in the Bauhaus movement, began to arrange their forms within a rectangular frame by using the same method of informal balancing. Relative weights would be ascribed to each visual element, and pictographs and copy blocks would be counterpoised according to their mutual relations, rather than being statically balanced along symmetrical axes. However, magazine designers adopting the Mondrian, plastic style chose to divide their compositional spaces with imaginary lines, rather than with Mondrian's real lines. They ordered their works by aligning graphic elements along invisitle vectors. This logical development also provided designers with a new compositional element—white space or negative space. This negative space, if regular in its outline due to geometry and continuous, imaginary perimeters, could have a dynamic effect on other visible structures within the composition. The negative space could define the positive space, like yin and yang. Gestalt psychologists later would refer to this as a figure-ground relationship.

The only problem with this Mondrian-style of balancing and dividing space was its two-dimensional limitation. Mondrian did not allow for the articulation

of depth in his theory of Neo-Plasticity. Consequently, compositions had to be rectangularly plane rather than cubic. The imaginary lines formed by copy blocks could not be bent inward. This was necessary for legibility's sake, but the designer who wished to add a sense of three-dimensionality to his work was limited in the devices he could use. Shadow type could be employed to add depth, as could tone. But, outlines of illustrations had to be regular and two-dimensional, since diamond-like halftone finishes, which could provide a sense of depth through the use of two vanishing points, would add unnecessary visual weight and energy to a spread and would pose significant cropping problems, since the finish would not mesh with rectangular film formats.

Because designers are tied to realism and the increased marketability it generates in mass communication, they had to find a more usable device to easily express three-dimensionality. Lines, again, were the best solution, but they were to be found in photographs, not in the plane configuration of the titles, copy blocks and halftone finishes. In photography, where we have the same problem of trying to create the illusion of a third dimension in a two-dimensional artifact, we can create depth with overlapping figures, juxtaposed tones and the arrangement of warm and cool colors. But, while colors are missing in black-and-white photographs and a composition may be monotonal, lines will always be present, and converging lines are the easiest way to express depth in a photograph. A designer wishing to suggest the illusion of three-dimensionality within a single spread could choose photographs with strongly converging lines to create this effect.

The next step was to create a sense of three-dimensionality through successive spreads, rather than just within one spread. Jan White, the innovative designer and Folio magazine contributor, has devised a theory of three-dimensionality in magazine design that relies on the use of real and imaginary lines.

White maintains that magazines can distinguish themselves from other vertically oriented, printed media, enliven their layouts, and create a better sense of design totality by exploiting their horizontal rectangularity. To do this White says that the designer must rely upon the use of a "magic line."[18] A magic line is an edge or frontier. It is used to force a horizontal visual flow across the gutter, and each story dictates its own magic-line position.[19]

Once the magazine designer has caused the viewer to see the spread as one design unit, a horizontal rectangle, he can begin to exploit the memory of the viewer to create a feeling of three-dimensionality. Because of horizontal flow, the reader is already predisposed to turn the page. The designer can reinforce this tendency by using pointing devices to suggest to the reader that the horizontal flow should be followed to the next spread. If upon turning the page the reader finds a visual dress or line that is similar to the design of the spread he just left, White says he then groups those successive spreads in his mind and perceives them as a three-dimensional totality. Magazine design can be thought of as a continuum, a flow that is buoyed by, and glides along, real or imaginary vectors.

Lines are physical events

The world is constantly moving, whether macroscopically, as with Newton's laws of motion, or subatomically, as with the probabilities of quantum mechanics.[20] The photographer Robert Adams says it is the job of the photographer to make things stand still, "so that we can see them in their safe beauty."[21] Paul Caponigro echoes Adams and says that he tries to "express the quiet forces moving in nature, to make visible the constant flow."[22]

Lines in nature are physical events. They must behave according to the laws of physics. So, lines represent a balancing of physical forces.

Lines in a composition are also physical events. They represent a balancing of compositional forces. Moreover, in marking the separation of forces in compositions and in nature, lines divide space or a landscape into identifiable areas. The areas can be negative space, or they can be filled with detail and be positive space.

Time, too, is a physical event, and lines in nature are also time. Besides reacting to them spatially, the viewer can react to them temporally. Lines are momentous and must be seized. Yet, they also continue to exist with perception over time.

Just as we can see motion in nature, or stop its locus by freezing its remnants, we can see another fundamental physical force—gravity. It is usually the results of the force of gravity that are real, that we can see, fallen trees for instance. But, we can also perceive gravity kinesthetically in our muscles. If we look at an oblique line in nature, in a photograph, or in a magazine spread, we can feel the forces that act upon it. We intuitively sense the physics of that line.

Together, the fundamental forces of motion and gravity form a geometry that is represented by lines, either in nature or in a composition. Henri Cartier-Bresson says that composition relies upon the recognition of these geometric patterns.[23] Edward Weston suggested that this response must be intuitive.

> Now to consult rules of composition before making a picture is a little like consulting the law of gravitation before going for a walk. Such rules and laws are deduced from the accomplished fact. They are the products of reflection and after-examination, and are in no way part of the creative impetus.[24]

The geometry and physics of composition inextricably link the photographer with the image being photographed and the designer with the artifact being created. Brett Weston suggests that this phenomenon is like a "geometric explosion."[25]

He feels that his photographs represent a portion of the whole and expand beyond the frame.

Just as lines reflect the geometry or matrix of forces within the image or design, they also are the perception of the viewer. They form a dynamic equilibrium with the willing, active involvement of the viewer. Lines are sticks, trees in the forest. Whether or not they exist without witness is debatable, but they are what we perceive first before we "see" the forest. All else—tone, texture, shape, color—follow that intuitive response to lines.

Lines are agents of reduction, of simplification. In a well-ordered composition or design, lines can be thought of as echoes. The viewer latches onto them because it pleases him. They reverberate in tune with an absolute order within the self.

The image and the photographer/designer, then, are like a crystal. They are fundamentally connected and are a dimensional entity. The photographer/designer is necessarily part of the creation.

In a landscape photograph, for instance, it is no longer appropriate to say that nature is the creator and man is the discoverer. Reflecting upon capturing a landscape, Minor White said,

> It progressed by stages of a growing awareness of absorption into the place. Exposure after exposure were sketches leading—in no very conscious way—towards this final one. The same shapes, forms, designs recurred with a growing tension. When this was seen on the ground glass, anything separating man and place had been dissolved.[26]

The visual communicator would call this crystalline geometry "perception." The philosopher might call it "grand design." The new physicist would say that "discovery is creation," and that the image is a constantly moving re-creation of the patterns of organic energy.

Limitations on the use of lines

Lines have their greatest effect within still frames. For this reason

the use of lines has limitations when one is dealing with film or television. Lines are considered in the editing process, but motion is such a potent component that it becomes the single, dominant visual force.

Others would argue that color is a more powerful element, is perceived first, and is the primary ordering element in a composition. Indeed, color is often overwhelmingly strong, sensual and realistic, but it cannot be paramount. Otherwise, black-and-white designs and photographs could not be as easily accepted and consumed as they are.

There is also a critical difference in the use of lines in photojournalism and graphic design. In the former lines are discovered and placed within a frame that exists in the photographer's mind. In the latter lines are created and placed within the blank frame that lies in front of the designer, as well as in his mind. In both cases, however, the photographer and designer approach the problem with what Minor White calls "the blank state of mind,"[27] an active, receptive state of mind, but one that has no image pre-formed in it at any time. The creation and perception of the photographer or designer, then, only should be influenced by memory.

The importance of lines in teaching graphic design and photojournalism

Lines are agents that can blend intuition and previsualization. In graphic design it is important that students learn the function of lines. But in a larger sense, graphics students should become accustomed to thinking with lines. Design structure begins with linear formation, and as Arnheim suggests, lines are also the matrix of creation in the visual field of the designer's mind.

But instruction in the use of lines probably would provide an even greater benefit in teaching photojournalism. Henri Cartier-Bresson says that a journalist must be able to sense what is happening without having a press release or a priori knowledge. He writes, "To me photography is the simultaneous recognition in

a fraction of a second of the significance of an event, as well as the precise organization of forms that give that event its proper expression."[28]

Shooting landscape photographs is an intuitive act that relies upon the absorption of the photographer with the scene. However, landscape photography is contemplative and allows for previsualization and after-examination, compared to photojournalism, where physical events tend to occur quickly and the photographer must react with greater speed. In photojournalism there is usually little time for analysis of visual structure and composition. The photojournalist must focus his conscious attention on the developing news event, which is more often a product of frantic, mechanical time than it is of natural, process time.

By encouraging students to shoot landscapes as a warmup for photojournalistic forays, they can learn to compose by intuition. Composition should be "felt" or "seen" in an almost mystical sense, and lines are both the nuclei of intuition and the agents of previsualization. When a photojournalist, through practice in shooting landscapes, can reach the state of mind whereby response to lines is automatic, he will not have to dwell upon the "precise organization of forms." Instead, he can devote that perceptual energy to sensing the "significance of the event." A developing photojournalist can grow faster and reach a broader public by learning to seize the graphic.

Slide Presentation Outline

1. Slide #1—Landscape
   a. Placement of horizon line.
   b. Lines formed by abutting tones.
   c. Lines exist at periphery of shapes.
2. Slides #2-9—Landscape (series of high contrast slides ending with representational view).
   a. Lines as structural abstractions.
   b. Relative energy levels of lines.
   c. Gestalt grouping of lines.
   d. Emotive qualities of abstract lines.
3. Slide #10—"Continuum," Omni, February 1982, pp. 36-37.
   a. Use of real lines in magazine design.
4. Slide #11—Piet Mondrian, Composition in Black and White and Red, 1936.
   a. Real lines form rectangles.
   b. Asymmetrical, informal balance by juxtaposing visual weights.
5. Slides #12-14—"Jacques Malignon," Zoom, (No month) 1981, American Edition, pp. 84-89.
   a. Mondrian style in magazine design.
   b. Use of imaginary lines.
   c. Use of visual vectors; stimulating/arresting visual flow.
   d. Lines delineate positive and negative space.
6. Slide #15—Landscape
   a. Real lines in landscapes.
   b. Asymmetry in landscapes.
7. Slide #16—Landscape
   a. Simplicity of lines.
   b. Division of space into fewest areas.

8. Slide #17—Landscape

   a. Lines reinforcing each other.

   b. Lines represent time.

9. Slide #18—Photojournalism

   a. Lines force attention on human subjects.

10. Slide #19—Landscape

   a. Increasing the number of lines and the divisions of space.

11. Slide #20—Landscape

   a. Complexity of linear division demands compositional ordering by another visual element—color.

12. Slides #21-22—"Elan in Rio de Janeiro," Architectural Digest, January 1982, pp. 112-117.

   a. Use of converging lines in printed photographs to create sense of depth within magazine spread.

   b. Diagonal lines to link successive spreads.

13. Slides #23-25—Landscapes

   a. Use of converging lines in photographs.

14. Slide #26—Photojournalism

   a. Use of color to form imaginary lines and illusion of depth.

15. Slides #27-30—"Alaska," Outside, March 1978, pp. 40-47.

   a. Jan White's theory of three-dimensionality in magazine design through use of horizontal vector flow.

   b. Use of memory in magazine design.

   c. Graphic pointers to sustain design continuity.

16. Slides #31-32—Photojournalism

   a. Using lines to contain viewer within the frame.

   b. Using lines to accentuate a human dynamic.

17. Slides #33-36—"Exploring with Don Street," and "Character Building to Cape Town," Sail, January 1982, pp. 104, 105, 110-115.

    a. Use of gravitational lines in magazine design—visual and kinesthetic perception.

    b. Using physics to unite verbal and visual.

18. Slide #37—"Tim Hutton Understands," Rolling Stone, February 4, 1982, pp. 18-19.

    a. Using unnatural rendering of gravity and reciprocal kinesthetic response for visual arrest.

19. Slide #38—Photojournalism

    a. Use of gravitational lines to depict expenditure of energy.

    b. Interaction of force lines to create compositional dynamic.

20. Slides #39-40—Landscapes

    a. Use of lines to depict radiant energy.

21. Slide #41—Landscape

    a. Locus and energy level of lines can have emotive quality.

22. Slide #42—Landscape

    a. Use of lines to focus interest.

    b. Use of lines to heighten perception of energy.

23. Slide #43—Photojournalism

    a. Use of lines and memory to depict sexual energy.

24. Slide #44—Photojournalism

    a. Use of lines to unite split centers of interest in a composition.

25. Slide #45—Photojournalism

    a. Interrupting the gestalt grouping of lines with introduction of human element.

    b. Using lines to link human figures with their environment.

26. Slide #46—Photojournalism

    a. Use of lines to tell a story; to suggest meaning.

27. Slide #47—Photojournalism

    a. Linking human figures by Gestalt grouping of continuous lines.

28. Slide #48—Photojournalism

    a. A synthesis of the above.

Time: 30 minutes

Notes and References

[1]Rudolph Arnheim, Toward a Psychology of Art (Berkeley: University of California Press, 1966), p. 80.

[2]Rudolph Arnheim, Entropy and Art (Berkeley: University of California Press, 1971), p. 25.

[3]Ibid.

[4]Ibid.

[5]Richard D. Zakia, Percertion and Photography (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975), p. 82.

[6]John Berger, About Looking (London: Writers and Readers Publishing Cooperative, Ltd., 1980), p. 50.

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