

# *Picture This*

PERCEPTION & COMPOSITION

MOLLY BANG

FOREWORD BY RUDOLF ARNHEIM

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## Foreword

I confess that I have never quite understood the distinction between grown-ups and children. Not only because it has been rightly said that in every true grown-up a child is hidden, nor only because children are able to ask questions so penetrating that we grown-ups have to mobilize all our intelligence and experience to answer them, but also because in our time artists such as Paul Klee and Joan Miró have admired the drawings of children and have shown in their own pictures that they profited from that admiration. It seems that the differences in the ways grown-ups and children look and behave and in what they like and dislike have become less important in our time than they have ever been.

Yet when one walks through a bookstore, most books made for children show up as different from those made for older people. This is evident especially in the illustrations. As much as they vary from one to another, more often than not they tell obvious stories. They depict the things of nature, familiar as well as improbable; and we would not want to miss those intimate qualities. But Molly Bang's book does not need those depictions; that is one reason it is an eye-opener for adults, not only a unique gift for children.

"Nothing but abstract shapes": this is what invites the curiosity of the browsing bookstore visitor. But the word *abstract* has a double meaning. It repels because it deprives us of the subject matter we consider indispensable for entertainment and instruction. By the same token, however, abstraction also leads us beyond the daily distractions, the practical particulars, to the elements from which they all derive. It adopts an idiom that has shaped our industrial revolution, the sober patterns of our engines, the geometrical simplicity of our most comforting furniture. Therefore there was protest but also exhilaration when, around 1910, the painter Wassily Kandinsky reduced his pictures of human experience to pure shapes and colors. Ever since, many good artists have shown us that we can find our lives reflected with a new immediacy in their "abstractions."

Molly Bang's book of colorful cutouts could not have been conceived a hundred years ago. Yet she did not need to join the abstractionists, either; nor did she have to invent a new language. Her special talent derives from her natural response to what comes alive when one is open to the elements of vision, the disks and the rectangles, the reds and the blacks. Far from being mere shapes, they transmit joy and fear, awe and gentleness. She shares this evocative talent with children, who profit from the same eloquence with the elements in their own pictures and who are known to accept "nonobjective" works of art without the prejudices that hamper some of their elders. They take the things they see at face value, and what they see speaks to them. A world that we have known from infancy and that therefore remains powerful comes alive in Molly's book. A natural magic presents us with the trees and the wolf as though they were given in all detail, and indeed with a new freshness. Even the homely triangle begins to look like Little Red Riding Hood.

There is an additional bonus. These simple shapes, animated by Molly Bang, do more than tell a story: they offer an order, a kind of grammar for the eyes, a recipe for yet further things to say. Therefore they also teach. Without preaching theory, they point painlessly to principles that can stimulate and guide anybody in his or her work, be he or she amateur or artist, child or adult. When I first looked at this book I thought, with the usual vanity of professors, that the author must have been a student of mine. Instead, something better is the case: she has seen what I have seen because we *all* see it — provided somebody has the talent to make us aware of the magic of shapes.

Rudolf Arnheim

## Preface

This book began about six years ago. I had been an illustrator of children's books for over fifteen years, but even though my work was successful in that the books were selling well and occasionally winning awards, I knew that I didn't understand something very basic about how pictures worked. I did know that I didn't understand "picture structure"; I didn't even understand what "picture structure" meant. I also knew that my pictures wouldn't get any better until I found out.

I found help mainly in four places. I took a painting course with Sava Morgan, a woman who had taught art for years in New York and had retired to Cape Cod. I read books on art and the psychology of art. I looked at pictures, and I tried to figure out what I was feeling as I looked at each one, and how my feelings might relate to the picture's structure. Lastly, I taught children, figuring that I would learn best by helping others define what they were doing or trying to do.

This book is the result of my "search for structure," and it does only one thing. It describes picture structure in terms of our feelings.

Once I saw how basic the relationship between picture structure and our emotions was, I wanted to see whether the principles couldn't be used by anyone at all to make strong, meaningful pictures. I began to teach this as a course, first to eighth- and ninth-graders, because they are so charged with strong emotions, and then more and more to adults as well. I'm convinced by all I've seen that every one of us is indeed an artist, if we only have the tools. Well, the principles in *Picture This* are tools, but like any tools, they can't be truly understood until they are *used*. Once you begin to cut and play with pieces of construction paper on your own, you will understand how the principles work. As you make pictures that are increasingly clear and meaningful, you will also see the artist in you begin to come alive.

## **Building a Picture**

We see shapes in context, and our reactions to them depend in large part on that context. If this were an illustration for a story about the ocean, we could variously read the red triangle as the sail of a sailboat, a shark's fin, a volcanic island rising from the sea, a "red nun" buoy, or the bow of a sinking ship. We feel very differently about the triangle if we see it as a sailboat than we do if we see it as a shark's fin.

But I thought of all this much later. I think I first decided to represent Little Red Riding Hood as a little red triangle and then asked myself, "Do I feel anything for this shape?" The figure is not exactly fraught with emotion, yet I knew I felt things about it that I didn't feel for others.

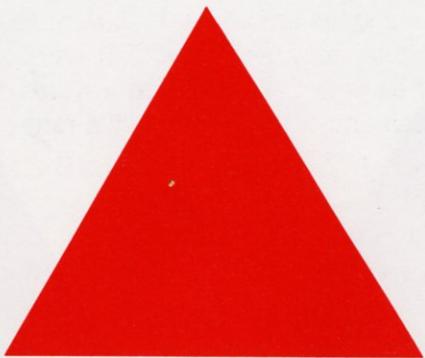
It isn't huggable. Why not? Because it has points. It makes me feel stable. Why? It has a flat, wide, horizontal base. It gives a sense of equanimity, or balance, as well, because its three sides are equal. If it were sharper, it would feel nastier; if it were flatter, it would feel more immobile; and if it were an irregular triangle, I would feel off balance. What about its color? We call red a warm color, bold, flashy; I feel danger, vitality, passion. How can one color evoke such a range of disparate, even conflicting, feelings?

What is red? Blood and fire. Ah. The feelings evoked in me by red all seem to be associated with these two things that have been red and only red ever since humans have been around to see them. Could the emotions brought up by red be a mixture of my feelings about blood and fire? So far, they certainly seem to be.

These, then, are the feelings I have for this medium-sized red triangle: stability, balance, a prickliness or alertness, plus warmth, strength, vitality, boldness, and perhaps some sense of danger. Now let me look at the triangle as Little Red Riding Hood. The shape and color, of course, relate to her clothes, but can I apply the *feelings* I have about her as a red triangle to her as a person? Yes: the figure suggests a character who is alert, warm, strong, stable, balanced, vital, and with perhaps some sense of danger.

If this represents Little Red Riding Hood, how might I show her mother?

and I'd always thought there had been little written and made about the 1930s. I think it's important to know what happened to us as a country, and I think it's important to know what happened to us as a people. But I think it's also important to know that we're not alone in this. That there are other countries that have had similar experiences, and that there are other countries that have had similar successes. I believe that hopefully this film will help people to understand a bit more about what's been going on in the world, and what's been happening to us here at home. I believe that hopefully this film will help people to understand a bit more about what's been going on in the world, and what's been happening to us here at home.

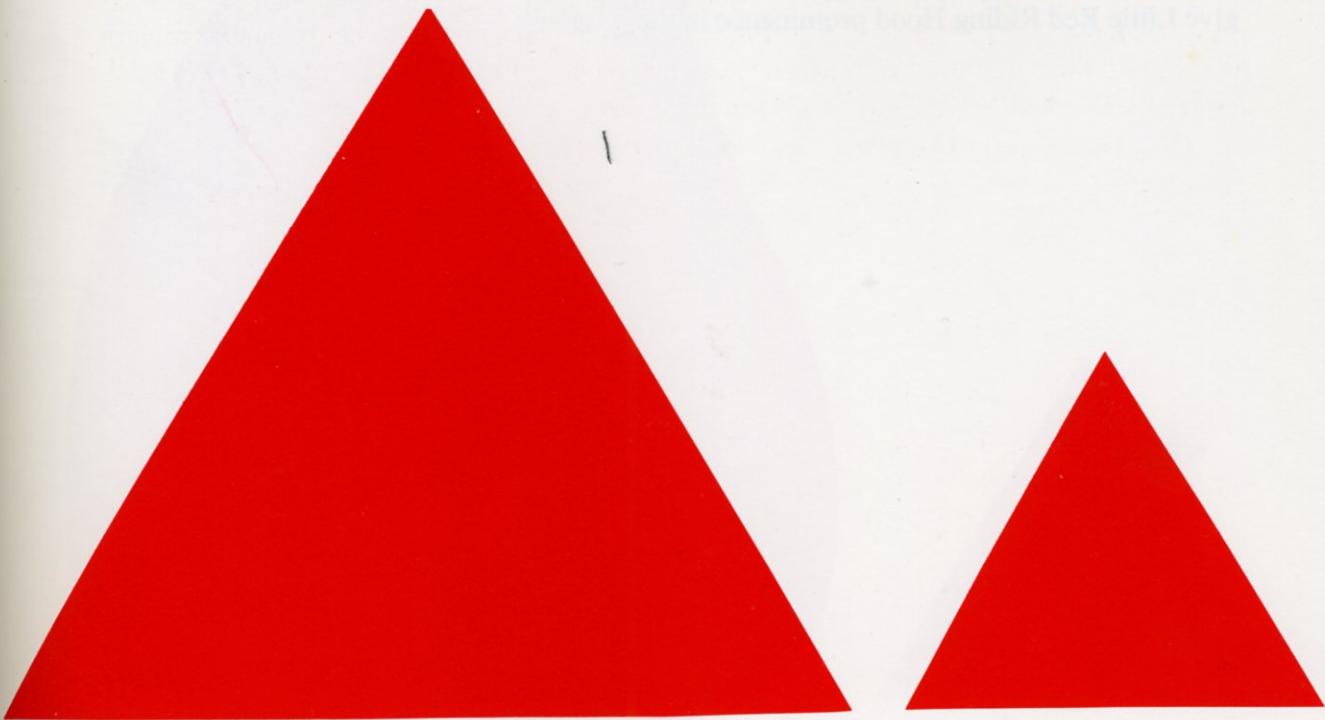


I could simply show her mother as a bigger red triangle, a bigger version of Little Red Riding Hood.

But what has happened?

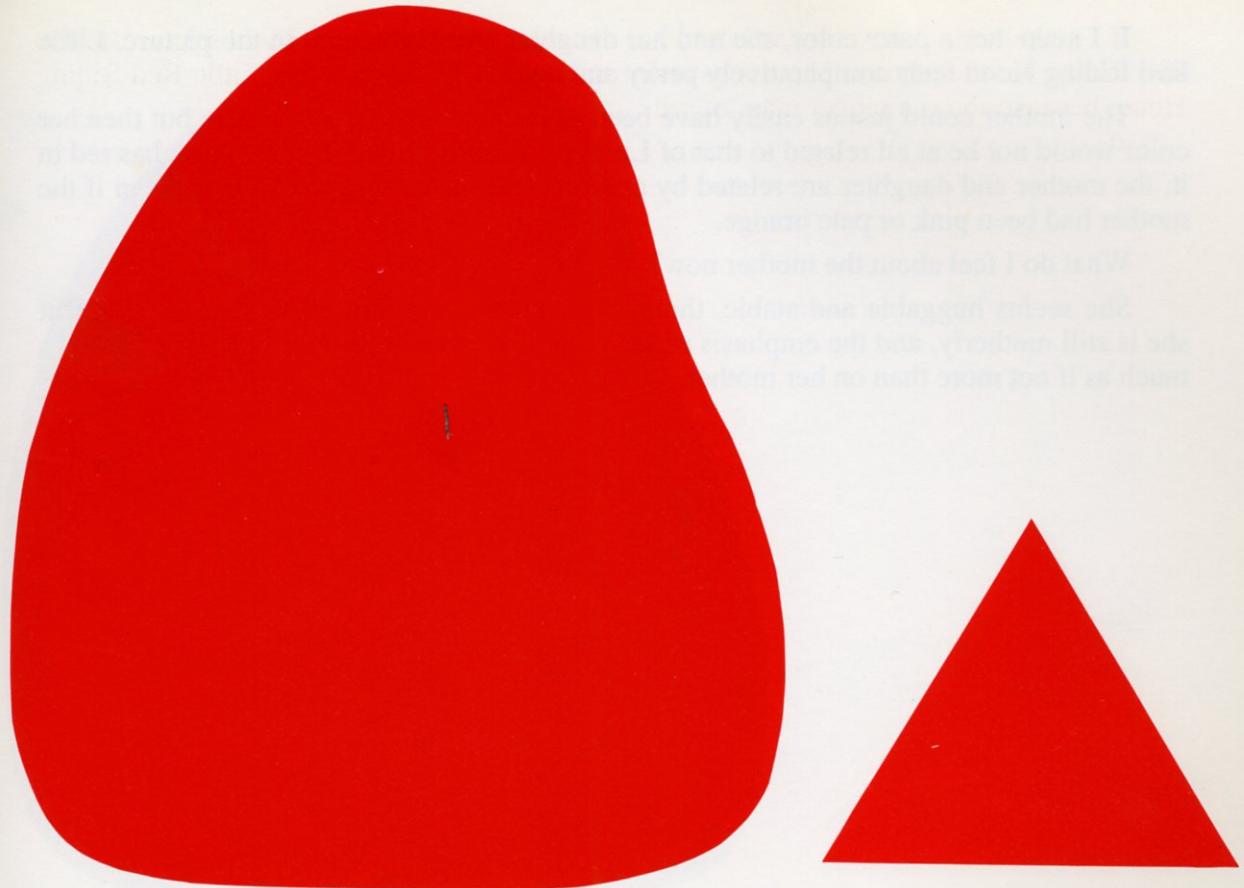
The mother has become the more important object in the picture and has overwhelmed her daughter. Little Red Riding Hood no longer appears to be the main protagonist. In addition, though this shape implies a mother who is warm and strong and vital, she is also overbearing and decidedly not huggable.

How can I make her feel less overwhelming and more huggable?



If I keep her triangular shape but round off her corners, she does seem softer. But she still takes over the picture. She draws attention away from the heroine, Little Red Riding Hood, because she is a bigger mass of red.

How can I keep her large (since mothers are larger than their young daughters) but give Little Red Riding Hood prominence in the picture?

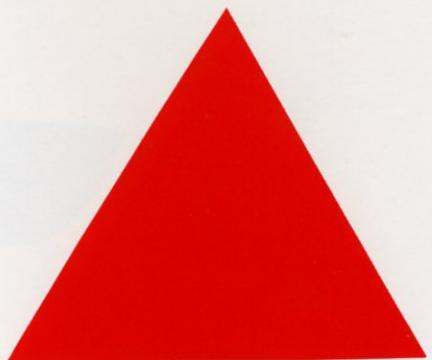
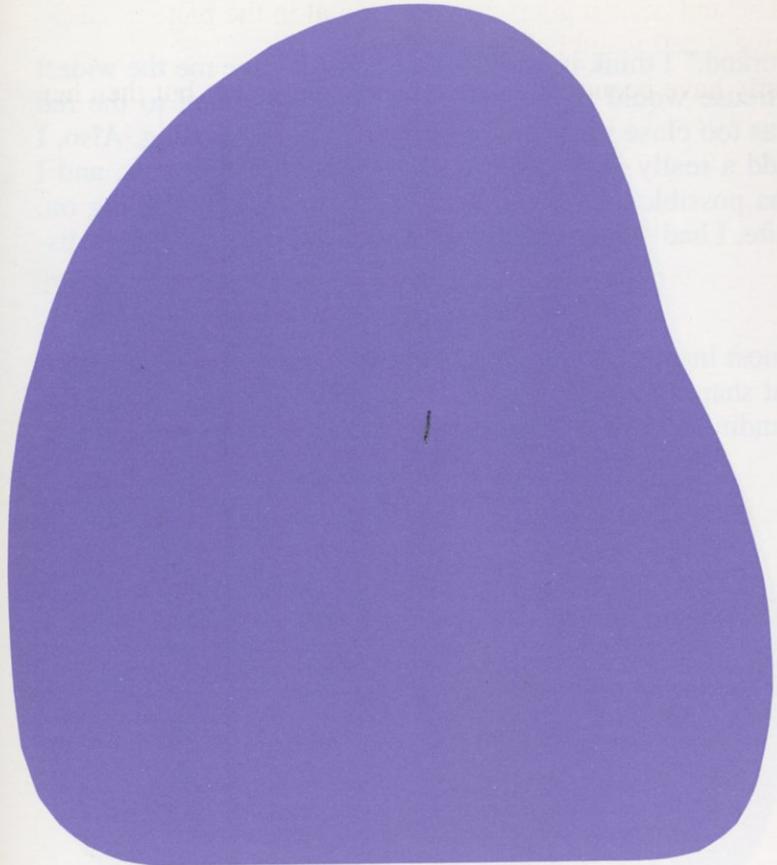


If I make her a paler color, she and her daughter are more equal in the picture. Little Red Riding Hood feels comparatively perky and bold.

The mother could just as easily have been made pale blue or pale green, but then her color would not be at all related to that of Little Red Riding Hood. Since purple has red in it, the mother and daughter are related by color as well — as they would have been if the mother had been pink or pale orange.

What do I feel about the mother now?

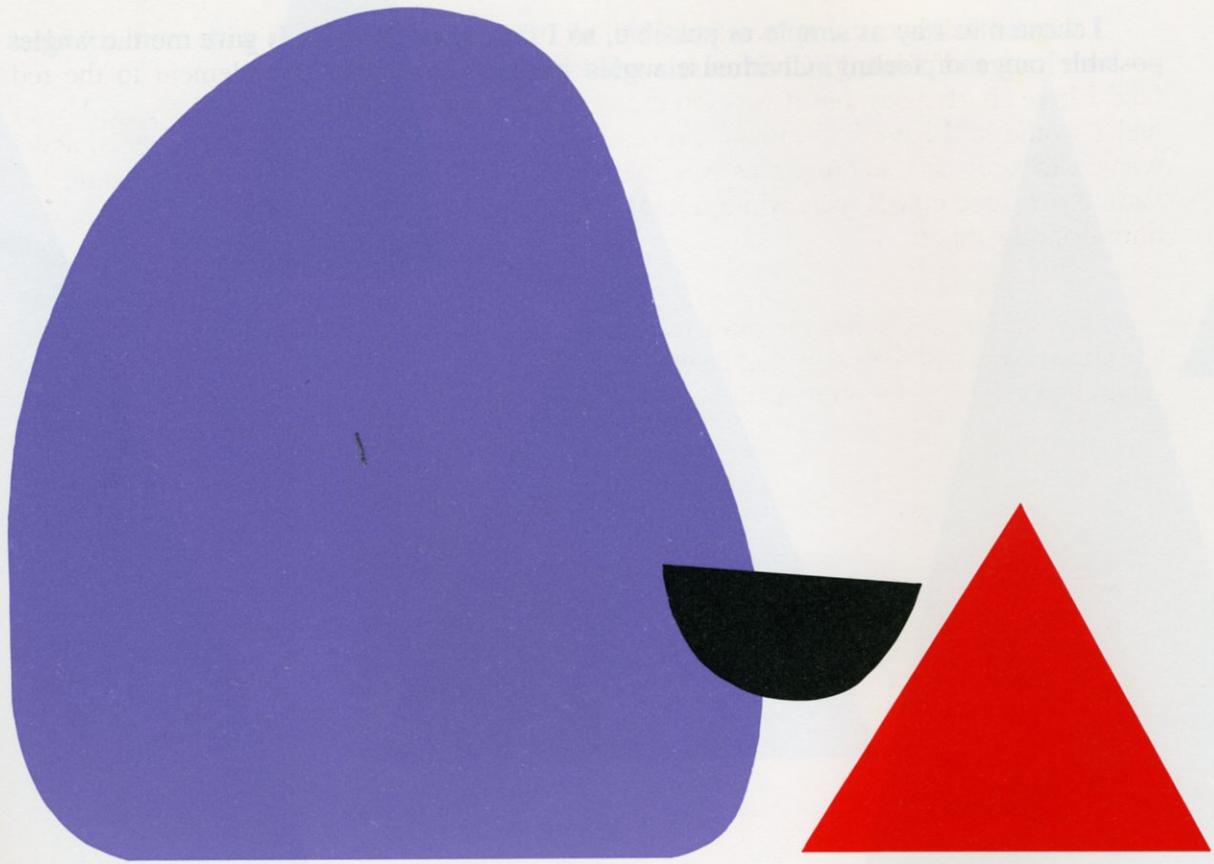
She seems huggable and stable, though less strong and less warm than before. But she is still motherly, and the emphasis of the picture is now on Little Red Riding Hood as much as if not more than on her mother.



And here is the basket.

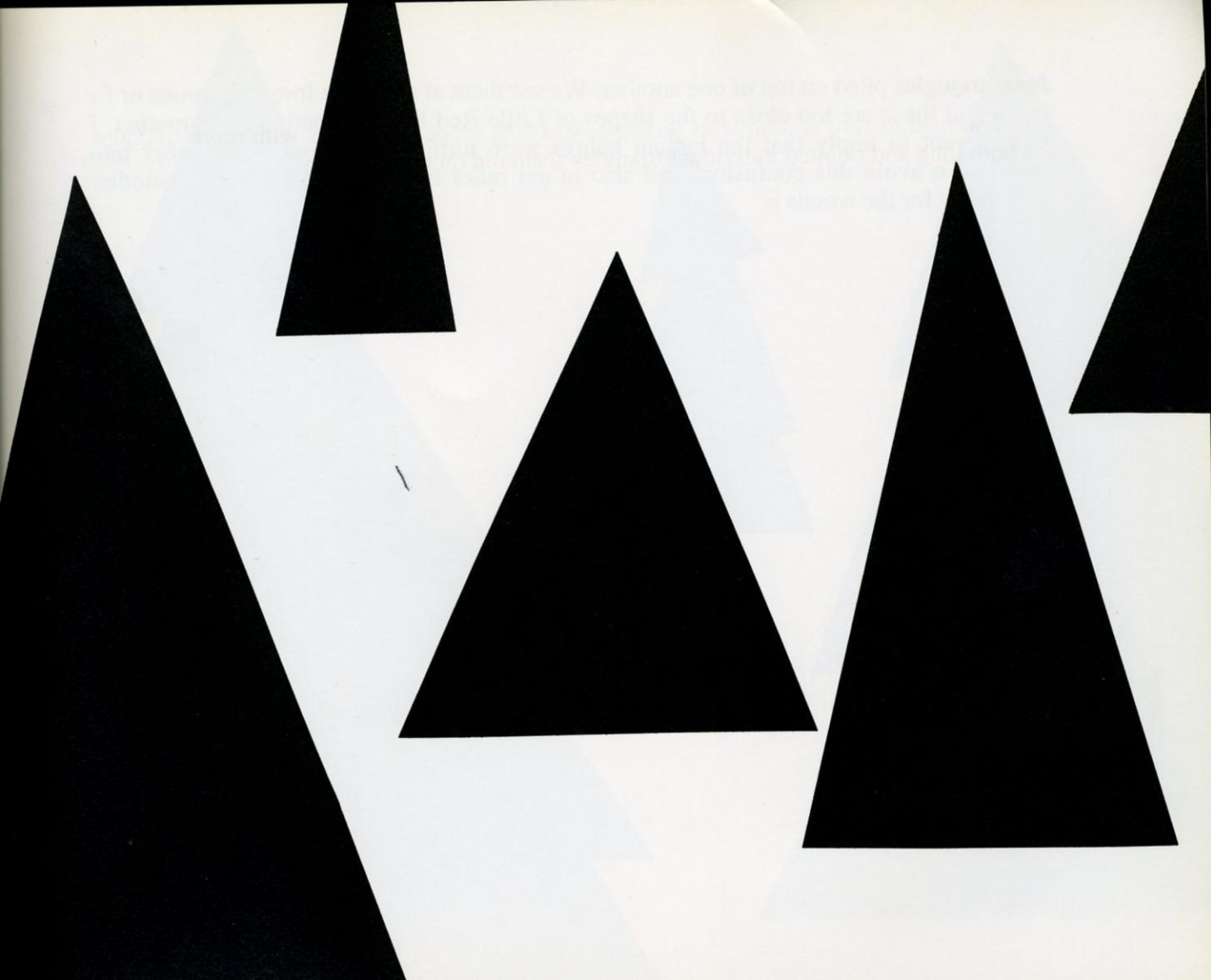
I chose black because it "worked." I think it "worked" because it gave me the widest possible range of feeling. Chartreuse would have been a better complement to the red (and I love chartreuse), but it was too close to the purple in intensity and feeling. Also, I feel I would still have had to add a really dark color to show the scary elements, and I wanted to keep this as simple as possible so I could keep track of what was going on. With these three colors, plus white, I had a wide emotional range, and each color was distinct from the others.

Now so far, this is not the most inspired or moving picture we have ever seen. But it has shown some of the ways that shapes and colors affect us emotionally. It also lays the groundwork for a better understanding of how to go about making the next picture, of



the woods.

I wanted to stay as simple as possible, so I first made the woods with more triangles — both long and pointed individual triangles scattered on the page, or



fatter triangles piled on top of one another. We see them at once as a forest of spruce or fir trees. But these are too close to the shapes of Little Red Riding Hood and her mother. I didn't want to imply that the human beings were turning into trees or the trees into people. To avoid this confusion, and also to get relief from all these triangles, another possibility for the woods is



this one.

These are simply long, vertical rectangles of varying lengths and widths, which, in the context of this story, represent branchless tree trunks. Because we can't see their tops, the trees seem very tall. We are now deep in the midst of the woods, as Little Red Riding Hood will have to be.

The trees give the illusion of going back in space. This sense of depth is accomplished simply by arranging the pieces so that the thinner they are, the higher up on the page their bases are placed.

It was when I had made this much of the picture — when I had “set the stage” — that I began to feel more involved; it was time for Little Red Riding Hood to make her entrance into the woods,

de este es heredado de la  
familia que viene de la  
antigua nobleza  
inglesa y tiene  
un gran sentido  
de la historia.  
En su libro, el autor  
nos habla de la  
importancia de la  
herencia familiar y  
cómo se transmite  
de generación en  
generación.

En resumen,

and here she is.

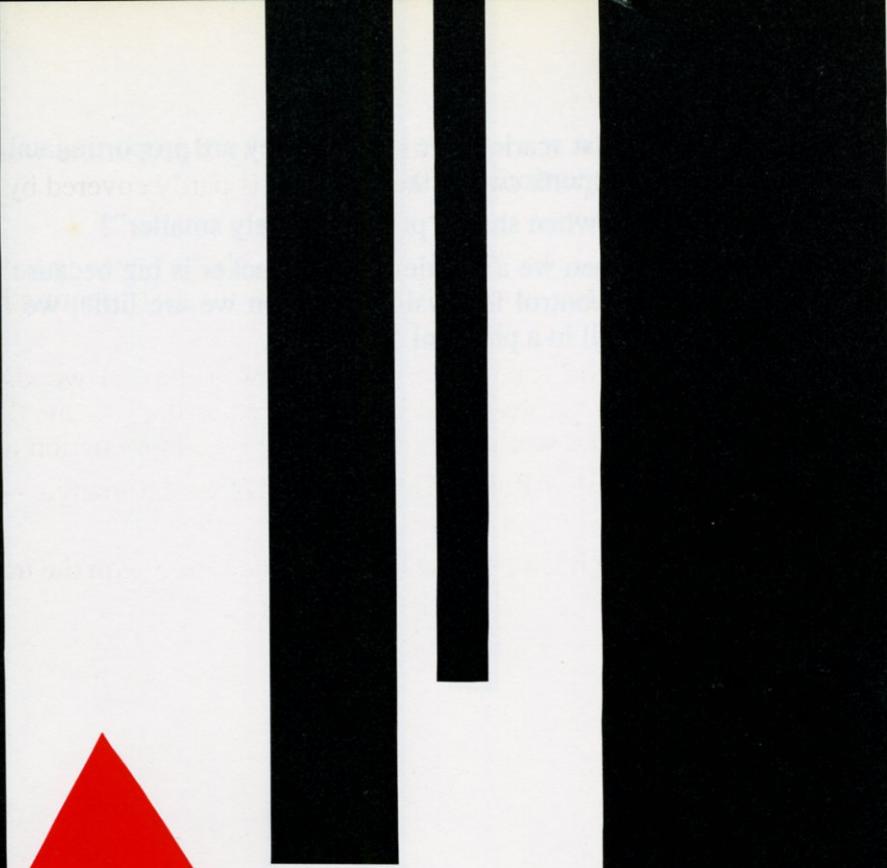
This picture can easily be read as Little Red Riding Hood in the woods, especially since she has been connected with one of the trees and is partly covered by it. This makes her belong and be inside the woods.

(It also makes *me* be inside the woods. As soon as I began playing with the figure of Little Red Riding Hood in the woods, I noticed how much I identified with her and "entered the picture.")

But the picture should be scarier than this, as these are the woods in which the heroine meets the wolf who is going to eat her up. I need to imply some threat in her environment. I need to construct a scarier setup even before the introduction of the wolf.

What can I do to Little Red Riding Hood — ONLY to the triangle — to make the picture feel scarier?

I could tip the triangle so it isn't so stable, cut off more of it with the trees, or



make it smaller.

The woods feel somewhat scarier here because they are proportionately larger in relation to the heroine; she is proportionately smaller.

Why does it feel scarier when she is “proportionately smaller”?

We feel more scared when we are little and an attacker is big because we’re less able to overcome the danger or control it physically. When we are little, we are weaker and can’t defend ourselves as well in a physical fight.



I can reduce Little Red Riding Hood still more, to make her seem even more overwhelmed by the situation. Also, I have to prepare for the fact that she will not stay alone in the middle of these trees. I need to make room for the wolf.

you get used to how  
it feels to be  
out there in  
the world, you  
will become more  
confident and  
able to take on  
the world.

"I can't believe  
I'm actually going  
to do this," says  
Samantha, who  
is a bit nervous.  
She's never been  
out in public by  
herself before,  
but she's excited  
about the trip.  
She's been saving  
her allowance  
for months now,

so it's time to  
use it up.

"I'm so happy  
she's finally doing  
this," says her  
mom, Jennifer.  
She's been  
encouraging  
Samantha to  
try new things  
and face her  
fears for a long  
time.

"It's important  
for kids to learn  
how to handle  
their own fears  
and challenges  
in a healthy way,"  
says Jennifer.  
She's been  
teaching  
Samantha  
about resilience  
and how to  
overcome  
obstacles.

"I'm so proud  
of her," says  
Jennifer. "She's  
done such a  
great job."

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I felt suddenly disappointed when I moved her up, and it took me some time to figure out why.

First of all, she looks smaller and farther away, even though the triangle is exactly the same size as on the previous page. She looks farther away because the trees have established a sense of perspective, of receding space, and Little Red Riding Hood seems to have moved back through that space just by being placed higher up on the page. That's fine.

But the picture doesn't feel as scary as it did before. Why not?

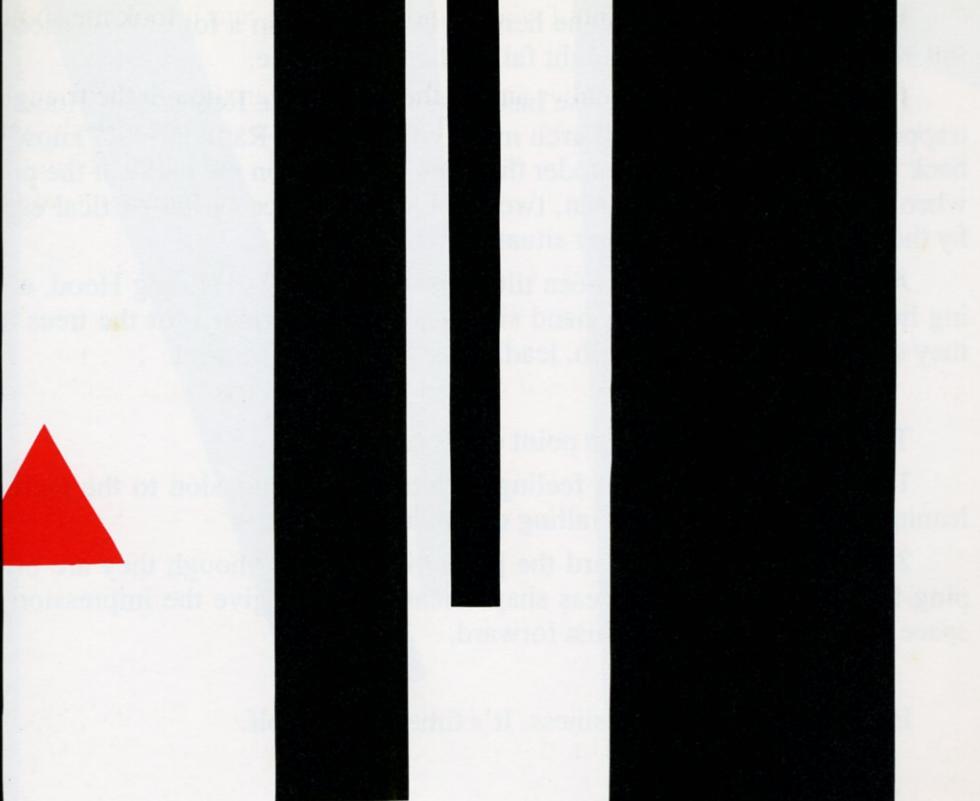
I finally realized that when Little Red Riding Hood is more distant from me, I don't identify with her or sympathize with her so much as before. Distance makes the heart grow colder — not fonder. We feel less "close" to her, less "attached" to her.

Also, the woods are proportionately smaller again.

Before I introduce the wolf, there is another aspect of the picture I can work on to make it feel scarier: the trees. How can I make the trees feel more threatening?

I could add many more of them, to make the woods darker and more like a prison surrounding her. I could add a lot of pointed branches, which would make the picture seem more threatening, since we are afraid of pointed objects.

I tried both of these, and the woods did feel very scary. But the picture became filled up, and when I put the wolf in, it became lost in the confusion. So I cleared almost all of the pieces away again and



tilted some tree trunks. Now the heroine is no longer in a forest of vertical, reliable trees, but in a woods where trees might fall on her at any time.

I notice that something else has happened to Little Red Riding Hood: she is visually trapped underneath a pointed arch made by two trees. Rationally, I “know” that she is far back in the distance and not under the trees at all, but on the plane of the picture — that is, when I see the picture as a flat, two-dimensional space — her vertical escape is blocked by the arch, and this makes her situation feel scarier.

Also, the trees have all been tilted toward Little Red Riding Hood, effectively pushing her back toward the left-hand side of the page. When I tilt the trees away from her, they seem to be opening a path, leading her up and to the right.

The two aspects I want to point out here are:

1. Diagonal lines give a feeling of movement or tension to the picture, as with the leaning trees that seem to be falling or about to fall; and
2. Shapes that lean toward the protagonist feel as though they are blocking or stopping forward progress, whereas shapes leaning away give the impression of opening up space or leading the protagonist forward.

Enough of this forest business. It's time for the wolf.



What shapes make the wolf?

Just three long black triangles.

Why do these triangles feel so scary?

Partly it's because they lean aggressively toward the left, where Little Red Riding Hood is tiny in comparison, and half hidden. Partly it's because of the context: we see the triangles as a wolf.

But I think mostly they feel scary because they are so pointy and sharp, because they are dark, and because they are so big.

I feel very differently when



the wolf is made much smaller,



or the points are changed to curves,



or the wolf is made from a paler color.

This mauve-colored wolf is a bit disturbing. I've used mauve once before, in the shape of Little Red Riding Hood's mother. Making the wolf mauve therefore connects it with the mother. Does this make the wolf look motherly, or does it feel more evil because of the association? Maybe this would be a more appropriate color if the story were about a ghost wolf?

Certainly the color distinguishes the wolf from the rest of the scene. The picture has three separate parts made from three different colors, with very little cohesion. It needs to hang together better.



Before developing the wolf further, I need to look at it for a moment. It is scary partly because these menacing shapes could be *anything* now — even something much scarier than a wolf. When I add wolf details, that unknown menace will become specific, and therefore slightly less scary. But the story requires a wolf.

What are the features of wolves that make them so frightening to us? Those are the elements that I need to concentrate on if I intend to make the wolf feel frightening.



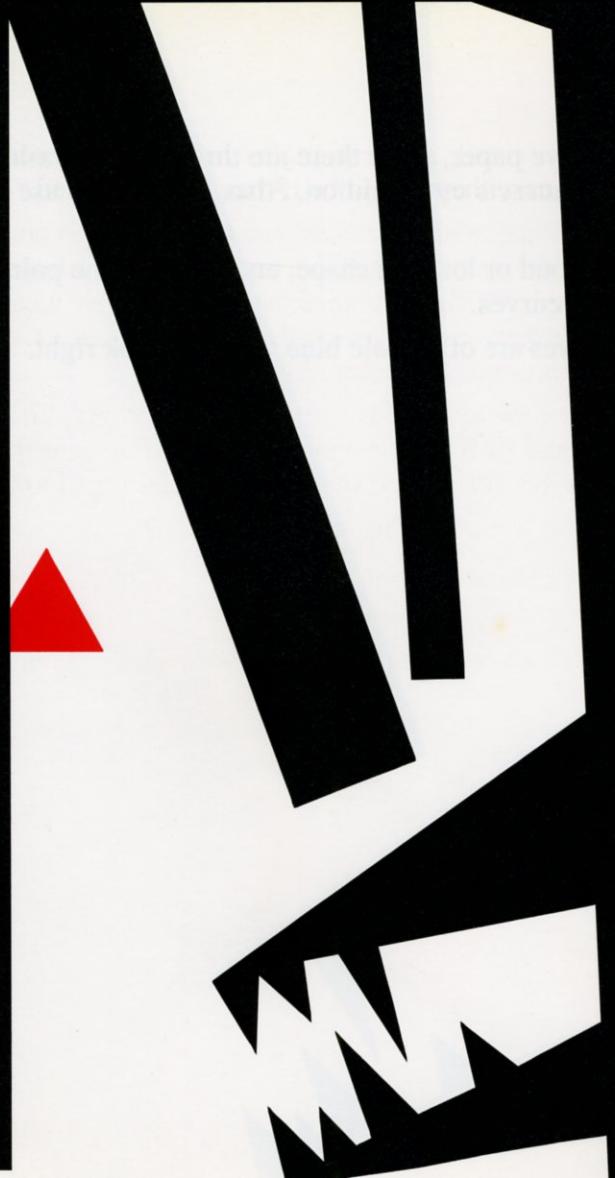
Teeth are one scary feature.

These are nothing but seven small, sharp triangles irregularly placed in the wolf's mouth. Imagine how much less scary they would be if they were rounded.

In reality, both the snout and the teeth of wolves *are* rounded; they are not honed to a sharp point as in these pictures. However, when we are in a scary situation, we see the scary elements in an exaggerated light: the attacker looks much bigger when we are afraid than when we are not; the teeth or weapons look much sharper, just as when we are in love, we tend to see the world "through rose-colored glasses."

When we want a picture to feel scary, it is more effective to graphically exaggerate the scary aspects of the threat and of its environment than to represent them as close to photographic reality as possible, because this is the way we *feel* things look.

What else does the wolf need in order to look more wolfish?



It needs an eye.

*I cut the eye out of the mauve paper, since there are three colors available in addition*  
to the white, and the new color attracts our attention. Also, I wanted to use all three colors  
plus white in every picture.

I made the eye a long diamond or lozenge shape, emphasizing the pointiness of a real  
wolf's eye but getting rid of the curves.

But even though wolves' eyes are often pale blue, it didn't look right.



Why is this eye so much scarier?

The obvious answer is that it is red, but why should a red eye be so much scarier than a pale-purple eye?

I have no idea. Mauve is a milder, less aggressive color than red, but why? Part of the reason may be purely physiological, that somehow red excites us. Psychologists have found, for example, that people tend to get into more fights in bright-red and hot-pink rooms and tend to eat more in rooms with red walls than they do in rooms with paler colors. Part of the reason may be that we associate red with blood and fire, so this is a bloody, fiery eye rather than an eye associated with flowers or with the evening sky. Maybe it's because we've seen drunken, bloodshot eyes, or eyes reflected in a campfire, and those were red. In some fairy tales, the eyes of witches are described as being red, but part of that may be that women used to spend a huge amount of time cooking over smoky fires, which made their eyes badly inflamed by the time they were old. Whatever the reason, red eyes are scarier to most of us than mauve eyes.

But I notice something else with the replacement of the mauve eye with the red, something I wasn't expecting: I immediately associate Little Red Riding Hood with the wolf's eye now, in a way I didn't before. They go together. The eye is looking at *her*.

This strong association is almost solely due to the color; I made the eye round but still red, but I associated it with Little Red Riding Hood the same way.

Then what happens if the eye is made exactly the same color *and* shape as Little Red Riding Hood?



The wolf looks stupid now, or maybe happy. Its glance is no longer pointed at its prey. Certainly it is not nearly as evil-looking as it was before. The picture feels very different, and yet all that has been changed is the shape of the eye.

A more disconcerting effect to me is that the two red triangles are now so alike, and I associate them so much with each other, that they *disassociate* from the rest of the picture. They are no longer meaningful elements of the picture. I see them not so much as Little Red Riding Hood and a wolf's eye now, but more as two red triangles that float up and out of the picture.



I return to the wolf with the more pointed red eye. What feature could I add to the wolf to make it yet more frightening?



A tongue.

Now it looks as though Little Red Riding Hood were being drawn right down into the wolf's mouth, just by the force of the large red mass there. I associate her even more with the tongue than with the eye now, because the tongue is a bigger mass of red. There seems to be some sort of gravitational effect here: the larger the mass of color, the more our attention is drawn to it.

My attention is also attracted more to the wolf than to the trees — partly because the wolf is the larger mass, partly because it breaks through the verticals of the trees, and also to some extent because it is to the far right of the picture, and our eyes tend to go from left to right on the page. But its blackness keeps it "hidden" in the trees much more than when it was purple.

I see here in a way I didn't understand before that when two or more objects in a picture have the same color, we associate them with each other. The meaning and the emotion we impart to this association depend on context, but the association is immediate and strong. Red *goes with* red.

There is one more aspect of the picture that can be changed to make it feel scarier, which is



that the background can be darkened.

In the third picture in which Little Red Riding Hood was shown with her mother, mauve was used as a soft, or gentle, color. It is also gentler here, in that it is less of a stark contrast with the black than the white was. Then why does this picture feel more threatening?

Because in this picture the mauve implies nighttime, or the approach of night, and night feels scarier to us than day because we see well during the day and poorly at night. Darker backgrounds can also imply a storm or overcast weather, neither of which feels as "sunny" as a day of sunshine.

I tried using purple for long parallel diagonal shadows protruding from the bases of the trees, but then I got involved in how the branches, which are out of sight here, would be cast on the ground, and the shadow pattern became disconcerting rather than helpful. I went back to the simpler solid mauve.

Now that the background is mauve, how can I use white as a positive element? (By "positive element" I mean here an object rather than a background.)



The teeth.

These white teeth aren't any scarier per se than black or red or mauve teeth; quite the contrary. Black teeth dripping with red blood would have been rather effective here. However, what has happened now that the teeth are white?

They pop out at us more. We notice them more than we did when they were black.

I see how powerful a color white is here because it shows up so strongly against dark backgrounds. White is effective when used with restraint.



This first section has shown how a picture can be built up element by element to produce specific feelings in the viewer.

This picture was supposed to be scary because of its context: a hungry wolf wanted to eat a lone girl in the woods. But the picture was made to feel increasingly scary to the viewer because of the colors, shapes, sizes, and placement of the pieces of construction paper that make up the picture.

Our feelings arise because we see pictures as extensions of our real world. Pictures that affect us strongly use structural principles based on the way we have to react in the real world in order to survive. As soon as you understand these principles, you will understand why pictures have such specific emotional effects. You will understand how pictures work.

## The Principles

I can't remember what the order was in which these "principles" occurred to me. I had read a lot and thought a lot about what went on in pictures, but largely things seemed to either "work" or "not work" for unrelated reasons. I think the principles pretty much came to me all at once, while I was playing with the Little Red Riding Hood pictures. What has taken time is paring them down to the bone. I've ordered them not in any hierarchical order, because I don't feel there is a hierarchy here, but more in the order that seemed most logical. Was it when I tilted the trees that I *saw* how gravity affected pictures? Whatever the reason, the first principles have to do with gravity.

Gravity is the strongest physical force that we're consciously aware of, and we're subject to it all the time. The force of gravity affects our responses to horizontal, vertical, and diagonal shapes, and it affects our responses to the placement of shapes on the page.

This all sounds very abstract, but what does it mean in concrete terms?

### **1. Smooth, flat, horizontal shapes give us a sense of stability and calm.**

I associate horizontal shapes with the surface of the earth or the horizon line — with the floor, the prairie, a calm sea. We humans are most stable when we are horizontal, because we can't fall down. Shapes that lie horizontal look secure because they won't fall on us, either. Because of this, pictures that emphasize horizontal structure generally give an overall sense of stability and calm.

But also, smaller horizontal or horizontally oriented shapes within a picture can be felt as islands of calm. Part of the stability we felt in Little Red Riding Hood as a triangle was due to her wide, flat, horizontal base.

lader's complete leadership version which was the first one adopted by him. It  
and two separate branches of government were given the right to approve of all his policies  
and to veto them if they did not agree with them.

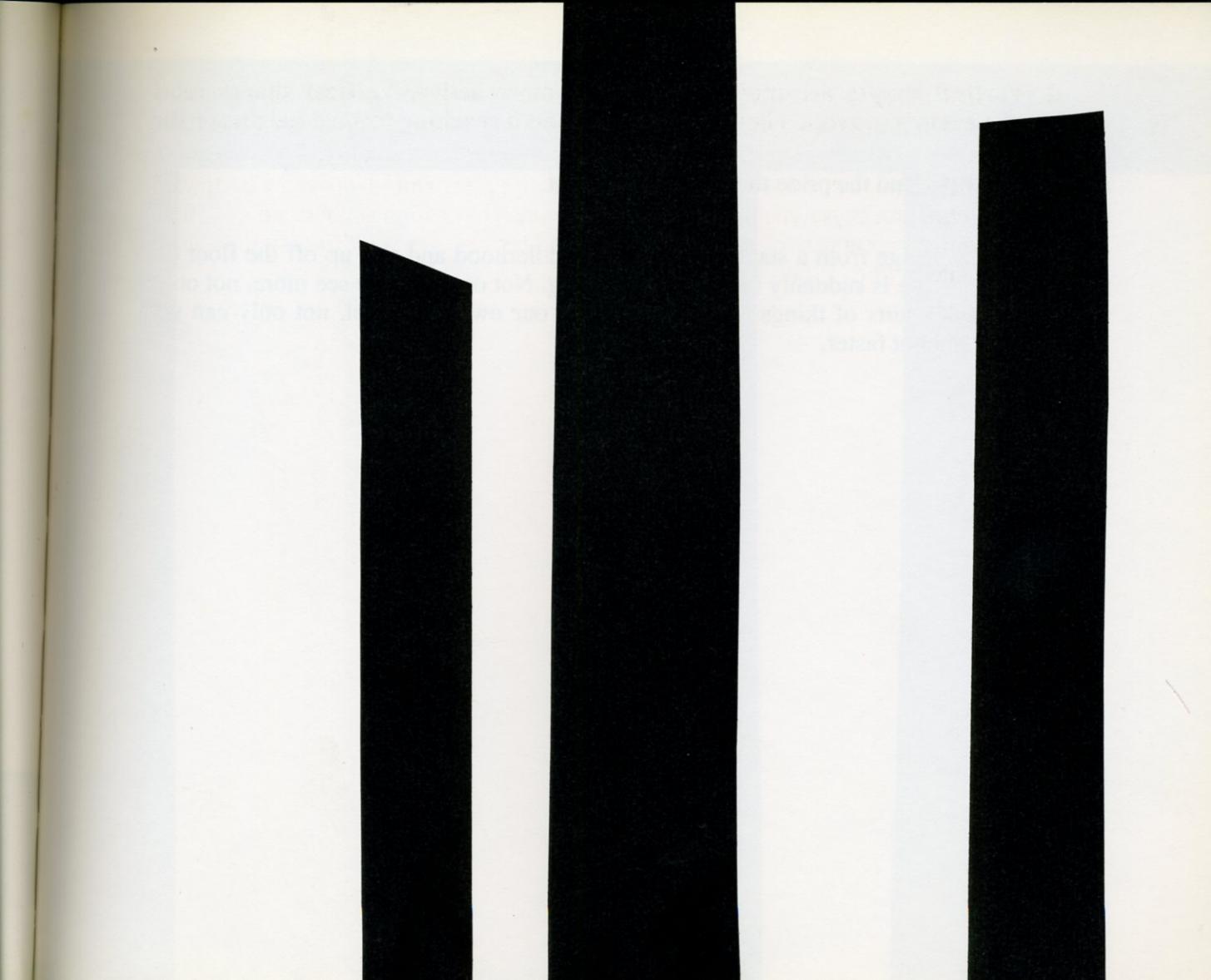
Except for very simple laws such as those relating to the printing of bank notes, all  
other legislation had to go through both branches of the legislature before becoming  
lawable. How could it be otherwise? It would be like trying to catch a mouse

with both hands. The law would be passed by the lower house, and then have to go through  
the upper house again. This was a good system, but it was slow and cumbersome.  
It was also a waste of time.

**2. Vertical shapes are more exciting and more active. Vertical shapes rebel against the earth's gravity. They imply energy and a reaching toward heights or the heavens.**

Think of the things that grow or are built vertically: trees and plants grow up toward the sun; churches and skyscrapers reach toward the heavens as high as they can go. These structures require a great deal of energy to build — to become vertical. They will release a great deal of energy if they fall.

Vertical structures are monuments to kinetic energy of the past and the future, and to potential energy of the present.



If a horizontal bar is placed across the top of a row of verticals, stability reigns again, as in a Greek temple. The sense of vitality and reaching toward the heavens has been checked. But the verticals give the horizontal aspect some regal quality. There is order and stability here, and the pride that goes with height.

When we change from a state of infancy to toddlerhood and rise up off the floor on two strong legs, life is suddenly much more exciting. Not only can we see more, not only are we above all sorts of things that used to be at our own low level, not only can we begin to move about faster,

the small amount of shading he has  
done on the top of the head and  
on the left side of the face. He  
has also shaded the right side  
of the face and the right side  
of the neck. The shading is  
done with a pencil or charcoal  
and it is very faint.

The shading on the face is  
done with a pencil or charcoal  
and it is very faint. The  
shading on the neck is  
done with a pencil or charcoal  
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The shading on the face is  
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and it is very faint.

but life is more exciting because we can fall.

### **3. Diagonal shapes are dynamic because they imply motion or tension.**

Objects in nature that are on a diagonal are either in movement or in tension.

Most of us see these diagonal lines as some sort of pillars, falling. (I see them as flat bars of iron.) They could as easily be roof beams, supported by structures outside the picture, or parts of growing branches, pulled up toward the light of the sun but at the same time pulled down to the earth by gravity.

We can also see these bars as leading us into the picture, leading us back into space. In an asymmetrical frame, diagonals give a sense of depth.

But however we see the bars, they are felt to be in movement or in tension because they are on a diagonal.

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A diagonal strut holding in place a vertical stud and a horizontal beam is in tension, supporting the one, restraining the other, and tying the two securely together as a much more stable unit.

Diagonals in pictures often perform exactly the same function.

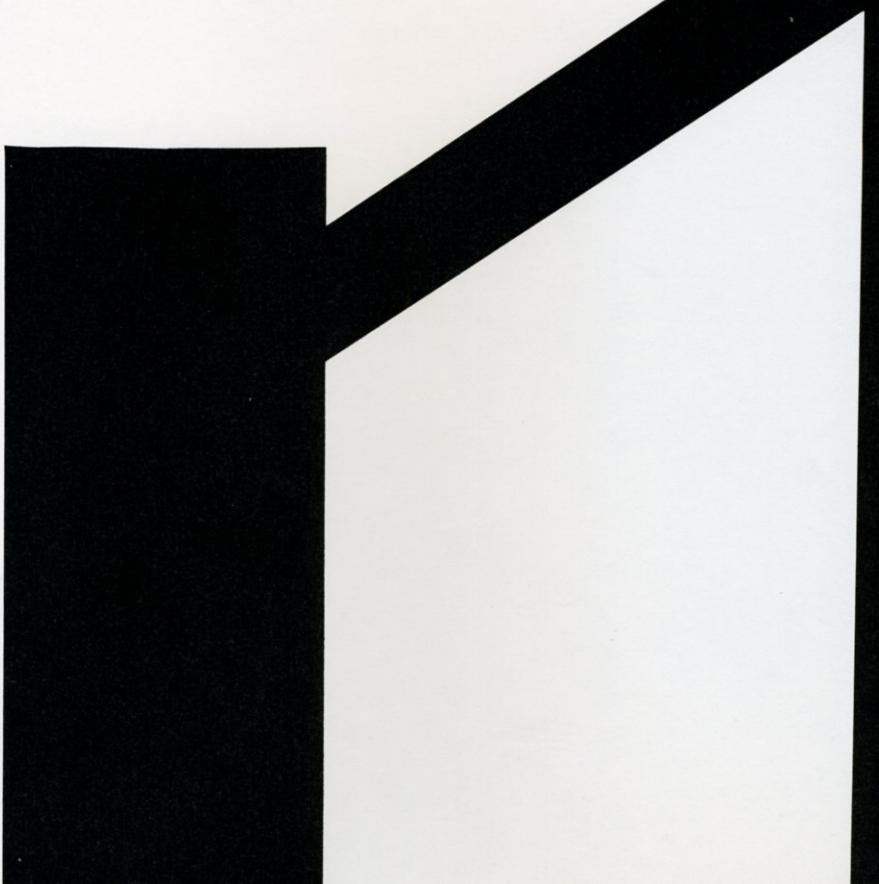
called *soft edges* or *soft transitions*. These are transitions that have no  
moving or pointed, angular momentum, rather they are transitions that do not have  
sharp bends or sharp turns but are smooth. Soft transitions are good because they do not  
cause any sort of jolting or jolted motion. Soft transitions are good because they do not  
hit anyone or allow anyone sharp turns. Good soft transitions.



The flying buttress is an architectural device that was invented to enable the builders of Gothic cathedrals to construct walls ever higher and ever thinner, helping to give an airy, almost weightless feeling to these structures. If a roof had been built on these walls without their having additional support, they would have buckled outward from the pressure. Flying buttresses are diagonal wedges braced against thick outer walls to support the inner shell of the cathedral.

These diagonal buttresses are under great tension.

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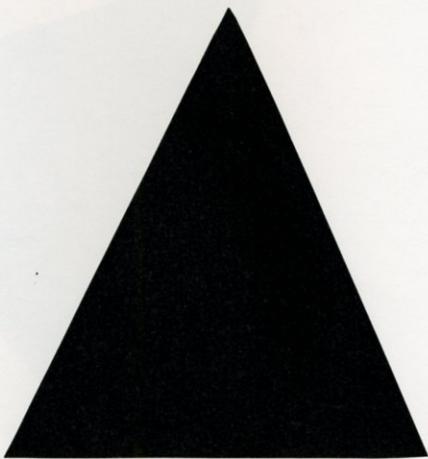
Mountains, sliding boards, waves: all of these are diagonals in movement or in tension. (The mountains are not visibly in motion, but they are gradually being worn down to flatness.) If we imagine an object on this surface, it has to move. Even our eyes can't help moving down and up it.

Notice how we tend to read diagonals from left to right, as though they are going up or descending.



A triangle placed on a flat base gives a feeling of stability.

the next sentence - because until the same growth becomes a truly healthy one, it will not be inclined to change but will instead live at peace with us and no longer be a threat to us. This is the reason why we never load-train our horses when we are training them. After all, if we could succeed in this, how is there any need to train them? It is because our horses are "training



The same triangle placed on a diagonal gives a sense of movement — whether we see it as a triangle teetering on one point, about to fall back and lie flat again, or whether we read it as a missile shooting up toward the right-hand corner of the page.

Notice how it feels as though it were floating, because there isn't any defined "ground" or baseline attached to it.

to a torque-drive system, which is currently in development. Some 200,000 units will be available by 1988.

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**ANSWER** The answer is (A). The first two digits of the number 1234567890 are 12.

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For more information about the study, please contact Dr. Michael J. Hwang at (310) 794-3000 or via email at [mhwang@ucla.edu](mailto:mhwang@ucla.edu).

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For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4530 or via email at [mhwang@uiowa.edu](mailto:mhwang@uiowa.edu).

10. The following table shows the number of hours worked by 1000 employees in a company.

When it is made sleeker and joined by other, similar triangles placed on a diagonal and decreasing in size, it becomes part of a slew of arrows, bullets, rocks, or unprogrammed missiles of any sort, following a diagonal trajectory.

When I took an art history course in college, the professor one day showed a slide of a painting that featured a mass of writhing figures. The artist had dramatically lit the bodies so that a diagonal section of them stood out from the rest, which was left in shadow. The instructor talked about the "dynamic of the diagonal" shown there. The statement obviously meant something to him, and it must have to me as well, because I still have a clear memory of the painting he was discussing. But I could never understand what he meant until I figured out this principle, and then that bubble of memory floated up from out of the darkened college auditorium of twenty-five years before.

It means that any picture that emphasizes the diagonal — whether with shapes or colors or light or any structural element — any such picture is dynamic, because the diagonal implies movement or tension.

This picture has an even greater sense of movement because the triangles get progressively smaller and because the outline of the whole group is triangular, or arrow-shaped. When I first played with the shapes, I cut them all the same size and had them more nearly parallel to each other. They still felt as though they were moving, but the result was quite boring and heavy.

and reduction in housing demand as well as from phased increases in interest rates. In addition, there is a risk that oil prices will rise again.

The financial system has been forced to write down its assets and to increase its capital ratios. This has required significant reductions in lending.

Central bank interest rates have been cut to support economic growth. This has been accompanied by a significant increase in the money supply.

Task of the Bank of England is to keep inflation at 2% over the medium term. It has been successful in this regard. The inflation rate has been reduced from 4.5% in 2007 to 2.2% in 2009.

Interest rates have been cut to 0.5% and the base rate is likely to remain at this level until 2011.

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Pictures are usually read as though there were an invisible emotional horizon line stretching across the middle of the space and dividing it into “top” and “bottom.”

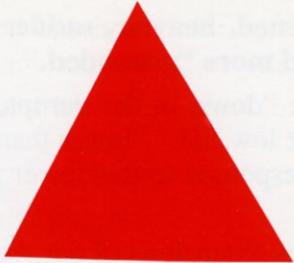
**4. The upper half of a picture is a place of freedom, happiness, and triumph; objects placed in the top half often feel more “spiritual.”**

When we are high up, we are in a stronger tactical position: we can see our enemies and throw things down on them. Down low, we can’t see very far; things might fall on us and crush us.

If we identify with an object that is in the upper half of a picture, we tend to feel lighter and gayer. If we want to show the spirituality of an object, we tend to place it high up. Again, this is due to the force of gravity: objects that are higher up give a sense of floating or flying or otherwise escaping the gravitational pull of the earth.

Think of some of the expressions we use every day to show that we’re feeling happy or have done well: “Top o’ the morning to you!” “She’s at the top of the charts”/ “the class”/ “her form,” “top man on the totem pole,” “top gun,” “top dog,” “top-drawer,” “top-notch,” “Things are looking up,” “I’m high as a kite,” and so forth.

When a person is said to be “high,” however, it implies that s/he may eventually have a “terrible downer” when s/he “comes back to earth.”



A large, solid red triangle is positioned in the upper left corner of the page. It is a right-angled triangle pointing downwards, with its hypotenuse running from the top-left towards the bottom-right.

**The bottom half of a picture feels more threatened, heavier, sadder, or more constrained; objects placed in the bottom half also feel more “grounded.”**

Think of expressions that show sadness or failure: “down in the dumps,” “feeling down,” “feeling low,” “low-down dirty dog,” “living the low life,” “lower than a snake’s belly,” and so on. We feel the same sorts of emotional responses to this lower position in pictures.

On the other hand, because we tend to see pictures as extensions of our world, thinking of the top half as “sky” and the bottom half as “ground,” objects in the lower half of the picture feel more “grounded”—more attached to the earth and less mobile.

There is an odd corollary here, which at first seems contradictory: **an object placed higher up on the page has “greater pictorial weight.”** This simply means that our attention is drawn to the same object more, or it feels more important, if it is high up than if it is lower down. We must feel that most things truly “belong on the ground,” and we are perturbed when this is not the case. All other things being equal, if we want to put more emphasis on an object, we tend to place it in the upper half of the page. It tends to feel freer, less attached to earth, and lighter, but it also has “greater pictorial weight.”



Before leaving the effects of gravity, I'd like to stop for just a moment to remember that these principles are used not one by one, but always in combination and always in some context. Each of the principles appears quite clear when it is considered individually, but each picture we see uses a combination of principles, which makes the interactions of the parts and the overall effect more complex. The addition of each new element can modify the effect of the other elements or even change them completely.

I made two very simple configurations to explore the way in which my response is determined partly by the content and partly by the structure of the picture, and to see how the structure can enhance or detract from the content. This picture might be of a person about to commit suicide by jumping off a cliff, a general surveying the surrounding territory, or a lone climber who has reached the summit and is gazing back over the vista below. We feel differently about it according to its meaning-content. How does the structure enhance or detract from this meaning-content?

Of the three possibilities, the general surveying the territory feels the most appropriate to me. The figure is high on the page — that is, "up" — but it is also "grounded" on a stable horizontal. It feels stately because of its equal sides, and its wide, flat base gives it stability and calm. The points and color enhance its martial aspect, and the triangle suggests a cape. The cliff is high enough in comparison to the size of the figure that I wouldn't want to fall off it, but I don't feel terribly threatened. It is a good vantage point from which to survey my land and troops.



If the figure represented a climber, the land might not extend off the page to the left but instead might form a peak. It would be more effective if no low ground were shown. The figure might be smaller and in a less stately pose — either with arms raised in triumph or perhaps balanced on two thin legs that would indicate the climber's frailty and exhaustion. I also reworked it to see how it could look more like a person about to commit suicide. The cliff, and the ground below, are more jagged now. I cut the figure of the person smaller and thinner and made it off balance, then brought it closer to the edge and tilted it over. Red would be appropriate if I were killing myself in rage and revolt. I chose the paler, "melancholy" color. (This reminds me of pictures by Edward Gorey.)

These examples are given as indications of the following: the basic principle that higher means happier or freer or more "spiritual" and lower means gloomier or more grounded is true, but the principles work in conjunction with each other, and they are subservient to context and content — to the picture's meaning.

The principles described so far result from gravity's effect upon us and the world and the pictures we look at. The next principles have to do with the picture as a world of its own.

As has been said before, we see pictures as extensions of reality. When we look at a picture, we "read" it as though gravity existed inside the picture as well as outside. Most pictures are rectangular, and their horizontal and vertical edges accentuate our sense of gravity's force. (When pictures are circular, they give the impression of floating, as complete circles *within* a picture seem to be floating or rolling. This again relates back to gravity, though, and to our experience with round objects.)

1900. The first edition was published in 1900, and the second edition in 1902. The third edition was published in 1904, and the fourth edition in 1906. The fifth edition was published in 1908, and the sixth edition in 1910. The seventh edition was published in 1912, and the eighth edition in 1914. The ninth edition was published in 1916, and the tenth edition in 1918. The eleventh edition was published in 1920, and the twelfth edition in 1922. The thirteenth edition was published in 1924, and the fourteenth edition in 1926. The fifteenth edition was published in 1928, and the sixteenth edition in 1930. The seventeenth edition was published in 1932, and the eighteenth edition in 1934. The nineteenth edition was published in 1936, and the twentieth edition in 1938. The twenty-first edition was published in 1940, and the twenty-second edition in 1942. The twenty-third edition was published in 1944, and the twenty-fourth edition in 1946. The twenty-fifth edition was published in 1948, and the twenty-sixth edition in 1950. The twenty-seventh edition was published in 1952, and the twenty-eighth edition in 1954. The twenty-ninth edition was published in 1956, and the thirty-first edition in 1958. The thirty-second edition was published in 1960, and the thirty-third edition in 1962. The thirty-fourth edition was published in 1964, and the thirty-fifth edition in 1966. The thirty-sixth edition was published in 1968, and the thirty-seventh edition in 1970. The thirty-eighth edition was published in 1972, and the thirty-ninth edition in 1974. The forty-first edition was published in 1976, and the forty-second edition in 1978. The forty-third edition was published in 1980, and the forty-fourth edition in 1982. The forty-fifth edition was published in 1984, and the forty-sixth edition in 1986. The forty-seventh edition was published in 1988, and the forty-eighth edition in 1990. The forty-ninth edition was published in 1992, and the fifty-first edition in 1994. The fifty-second edition was published in 1996, and the fifty-third edition in 1998. The fifty-fourth edition was published in 2000, and the fifty-fifth edition in 2002. The fifty-sixth edition was published in 2004, and the fifty-seventh edition in 2006. The fifty-eighth edition was published in 2008, and the fifty-ninth edition in 2010. The sixty-first edition was published in 2012, and the sixty-second edition in 2014. The sixty-third edition was published in 2016, and the sixty-fourth edition in 2018. The sixty-fifth edition was published in 2020, and the sixty-sixth edition in 2022.

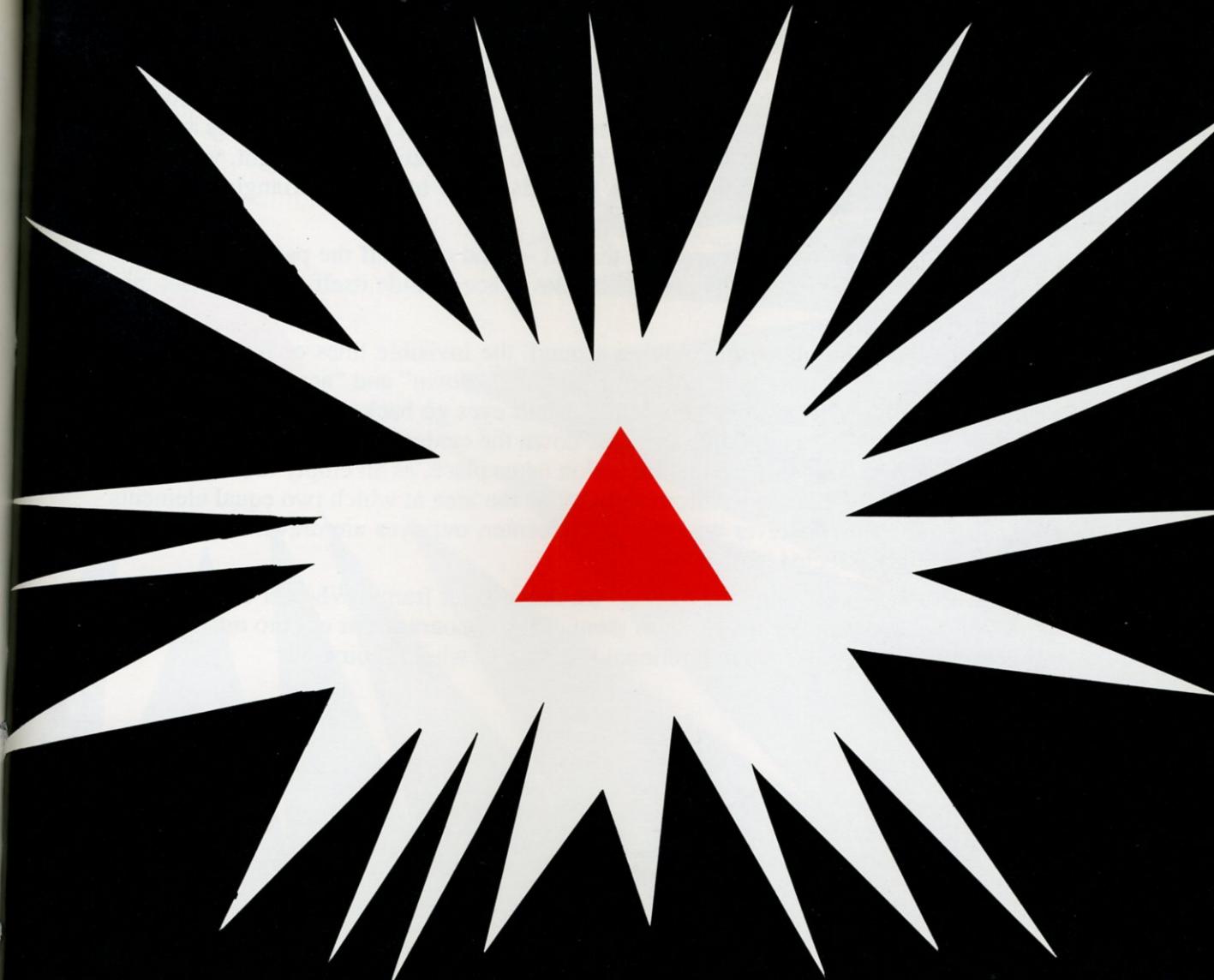


But there are other forces acting at the same time. The rectangular frame of the picture forms a separate world inside itself. The center of this framed world is the focal point of our attention; the edges enclose our attention and force it to the center. The frame creates a center/frame sort of visual conflict that can be thought of as a radial force, mainly radiating lines inward from the frame to the midpoint. To some extent, but to a much lesser degree, the center of the picture also radiates energy out of itself. You can sense this even more strongly when the picture frame is square or round; then the center is so strong that it is much harder for the eyes to get away from it and move around. Yet one of the goals behind most pictures is precisely that: to encourage the viewer to wander around inside this framed world and explore it all over. If a picture is meant to be explored, it is better to keep the main emphasis away from the center.

**5. The center of the page is the most effective “center of attention.” It is the point of greatest attraction.**

This picture can be read either as a jewel radiating light (or a heroine radiating triumph) or as a figure surrounded on all sides by attackers. Our emotional response depends on the context, but the fact remains that it is difficult to take our eyes from the center and move them around the page. They are trapped, pinned to the center.

What happens when the focus of attention is shifted away from the center of the page?

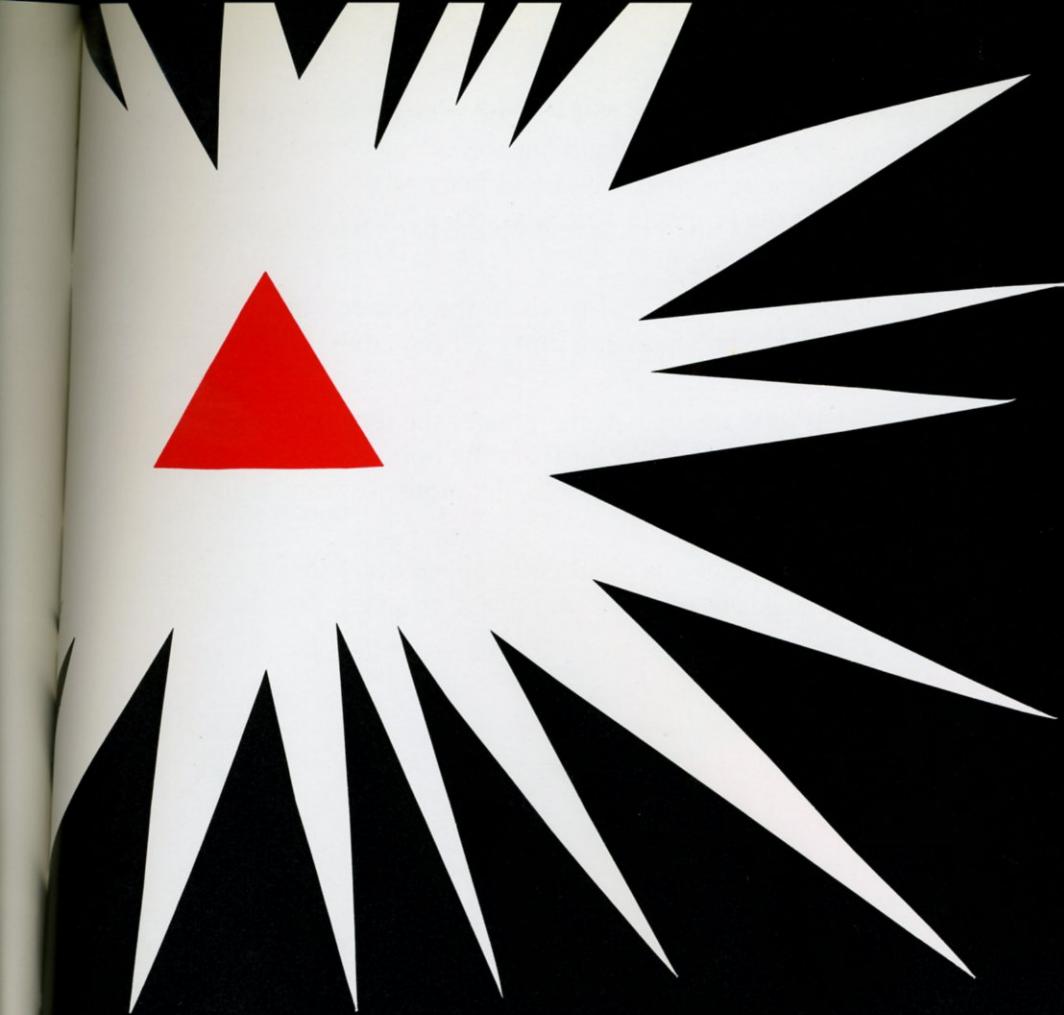


First of all, the picture is more dynamic. We feel that the red triangle is moving now, on a diagonal path either down toward the lower right and out toward us or away from us and toward the upper left. This sense of movement comes about because our eyes are now encouraged to move. We can shift along the points to the darkness at the right, which has now become a focus on its own; we move from darkness to the red triangle and back again.

Or we can move to the white space at the left — and clear off the page. Because the white area extends to the frame, the picture implies space outside itself. It breaks out into the world beyond.

But notice that with all of this moving around, the invisible lines of force are ever-present. We are aware of gravity as we move "up" and "down" and "across" the page. At the same time, we are very aware of the center as our eyes go back and forth across it; we are aware of the jagged lines dividing the page down the center. The center can be used as the hub of the picture, where more intense action takes place, as an empty area of calm or incompleteness, as a divider of left from right, or as the area at which two equal elements join, and so forth. But whatever we do with the center, our eyes are drawn to it and our feelings are strongly affected by it.

We are also aware of "breaking out of" the rectangular frame. Whether or not we are conscious of these forces, we are aware of them. They encourage our eyes to move in certain directions, and they affect our emotional response to what is going on.



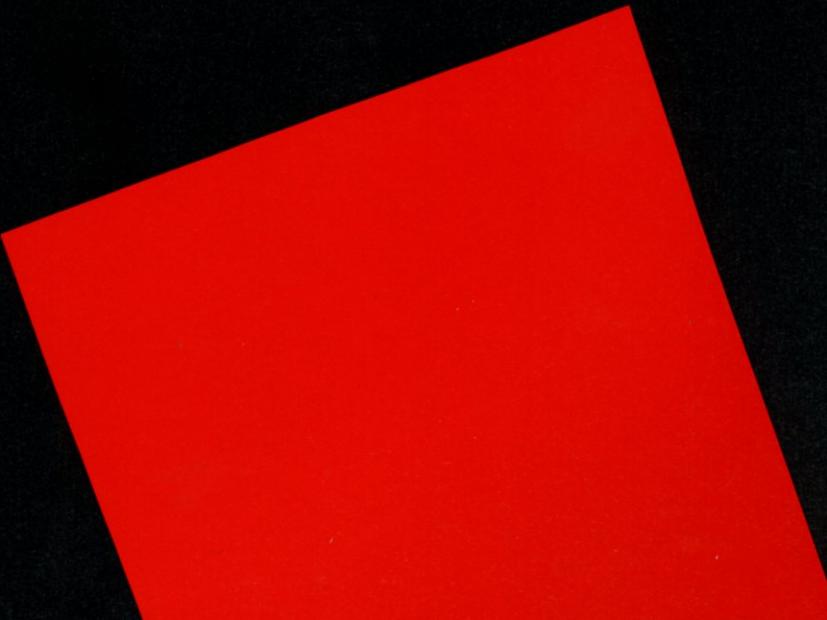
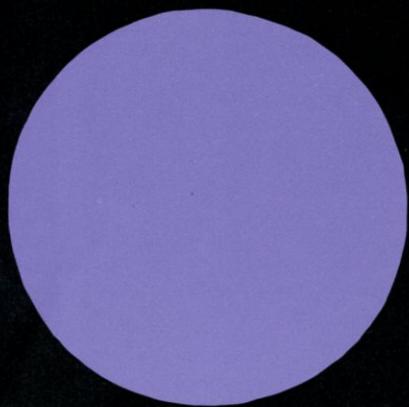
**The edges and corners of the picture are the edges and corners of the picture-world.**

Just as the emotional effects of high and low placement on the page have their verbal equivalents, so do the edges and corners of pictures.

“He’s cornered,” “she’s in a tight corner,” “I had to sit in the corner,” and “edgy,” “on edge,” “my nerves are on edge,” and “She’s pushing him over the edge” all mean the same things when they are expressed visually.

The closer an object is to the edge or to the center, the greater the tension. It reminds me of a golf ball on a green: when it sits comfortably far from the hole, we just look at it as a white ball on the green, but the closer it gets to the hole, the more we want to push it over the edge and in.

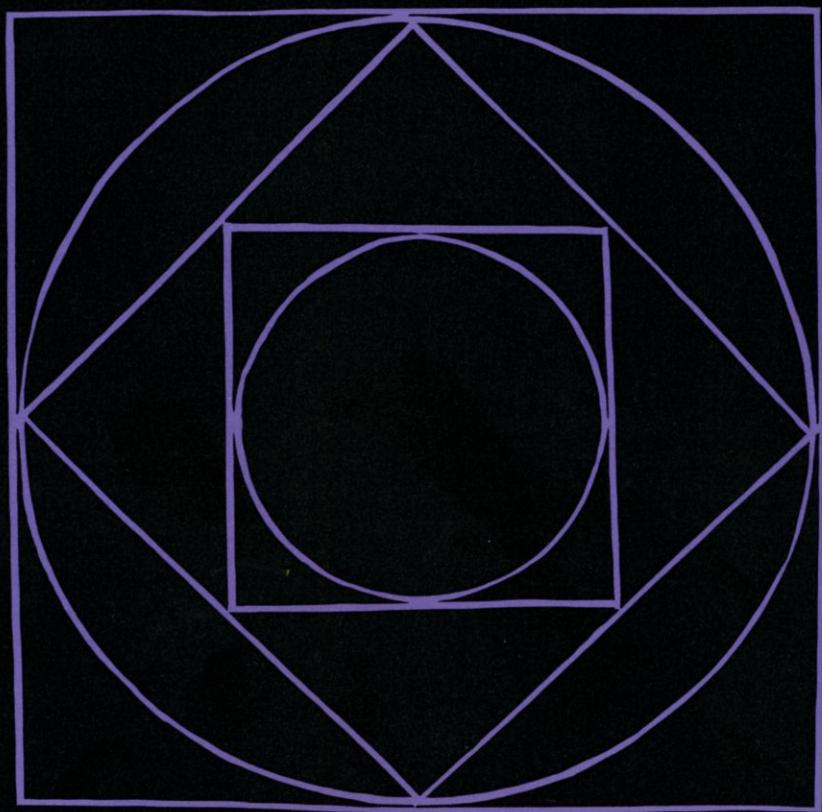
I find that when I cover up the red shape in this picture, the space becomes much flatter. It’s only when I see the red box break out of the frame that I’m aware that the other two objects can escape it, too.



Artists seldom place their figures in the exact center of the page *unless* that figure is meant to be an object of meditation. Visual aids to meditation, whether they be Tantric or Christian or nonspecifically religious, tend to show the object of meditation in the center of the page, so as to better enable the viewer to "center the mind."

With an object or a hole centered in the middle of the page, it is difficult to move away from the center.

Of course a third invisible force we read into pictures is the force of movement and of life. We see some elements as moving and others as immobile, according to whether or not they are alive or move in reality. We imbue them with movement appropriate to the picture context, but what principles do they follow? Happily, we also imbue these creatures with wills of their own, like the viewers', and at this point they are no longer subject to constricting principles. They may begin their movements on cue from the artist, but they move as the viewer wills them to.



The next principle has to do with light and dark. We read light backgrounds as day and dark backgrounds as night, twilight, or storm.

**6. White or light backgrounds feel safer to us than dark backgrounds because we can see well during the day and only poorly at night.**

(There are exceptions to every rule, usually due to context. Two obvious exceptions here are that we would feel safer if we were escaping from some danger “under cover of darkness,” and we would feel terrified if we were deserted on a limitless expanse of ice.)



As a result of our inability to see in the dark, black often symbolizes the unknown, and all our fears associated with the unknown, while white signifies brightness and hope.

But at the same time, both black and white are “noncolors,” and both represent death. When Europeans mourn a person’s death, they wear black. People in India and Korea wear white. We say “black as death,” while we say “milk-white” or “snow-white.” But we also say “dead-white.”

We associate red with blood and fire. What things in nature are either black or white? Many of them are lifeless: black night, white bones, black coal, white sea foam and clouds, black pitch or charred wood, white pearls, white snow.

Notice the way the red glows against the black. Bright and pale colors glow like jewels against dark backgrounds. Against white or pale backgrounds, bright colors often look washed-out. There is a physiological reason for this: since white light is made of all the colors, all the color receptors in our eyes are activated and become “bleached out” when we see white. The black background enables the color receptors to “rest”—except, of course, in the area of the red triangle.



The next principle has to do with points and curves.

Our skin is thin. Pointed objects can easily pierce through to our innards and kill us.

What do we know of that has sharp points? Most weapons are pointed: knives, arrows, spears, missiles, rockets, and also rocky mountains, the bows of boats that cut through the water, cutting tools like scissors and saw blades, bee stingers, mosquito probosci, teeth.... Nothing particularly cuddly.

the first time in the history of the world. The last time it was done was in 1969 when the Soviet Union sent two men to the moon. Since then, no one has been able to do it again. This is because the United States has stopped sending astronauts to the moon. They have instead focused on sending people to Mars. This is because Mars is closer to Earth than the moon is. It also has more resources that can be used for survival. The United States has also stopped sending people to the moon because they want to focus on other things like space exploration and science. They believe that by focusing on these things, they will be able to make better products and technologies. They also want to help other countries in their space exploration efforts.

The United States has made many breakthroughs in space exploration. One of the most significant breakthroughs was the landing of the Apollo 11 mission on the moon in 1969. This mission was the first time that humans had ever landed on another celestial body. It was a major achievement for the United States and for all of humanity.

Curved shapes embrace us and protect us.

**7. We feel more scared looking at pointed shapes; we feel more secure or comforted looking at rounded shapes or curves.**

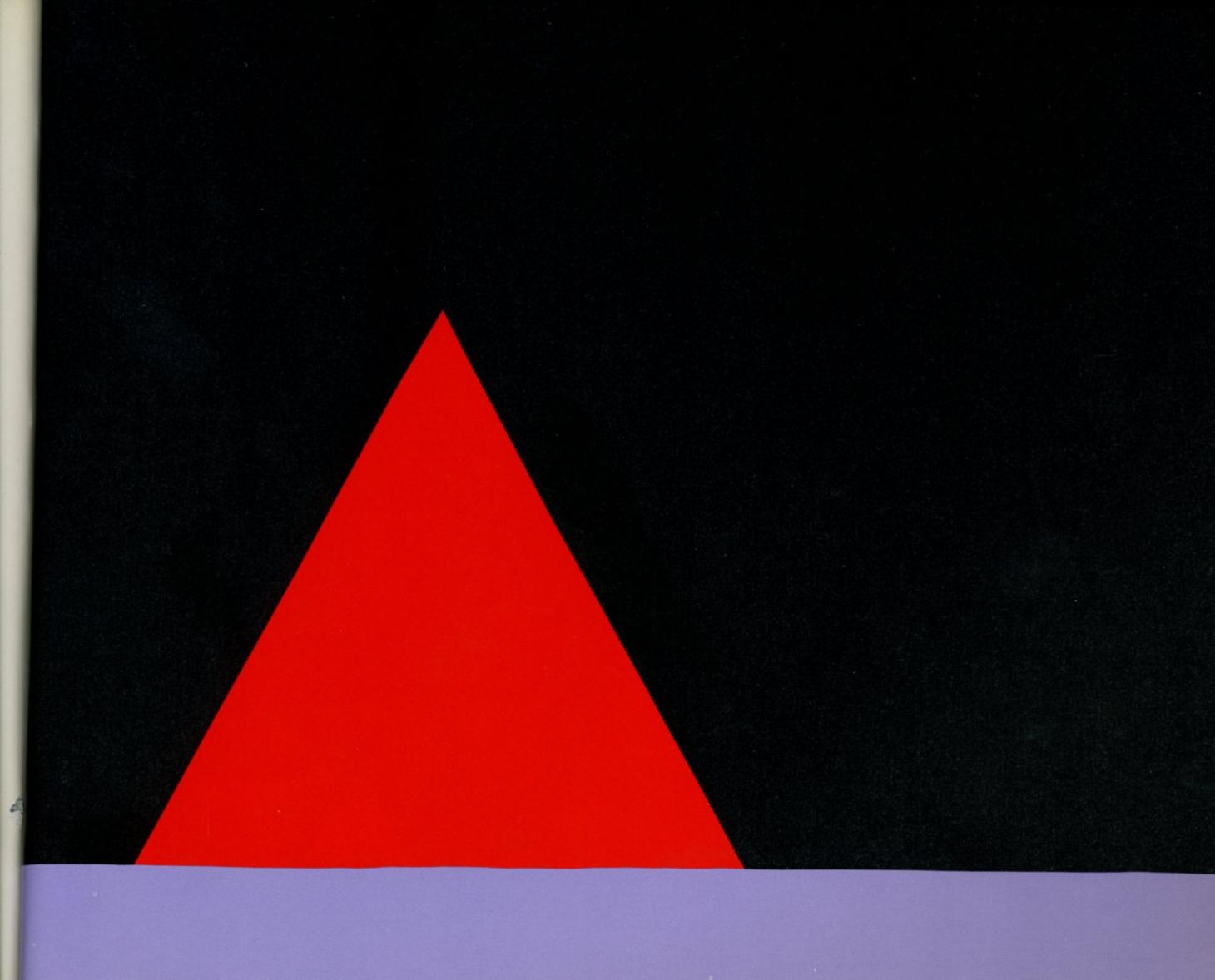
This picture of curves can't make us any safer than can the picture of points, and we know this, but the picture of curved surfaces makes us *feel* more secure than the one with sharp points because of our associations with these shapes. What do we know of that is formed from curves? Rolling hills and rolling seas, boulders, rivers — but our earliest and strongest association is with bodies, especially our mothers' bodies, and when we were babies, there was no place more secure and full of comfort.

Because of these associations, pictures with curved shapes feel more secure and comforting than ones with sharp points, which feel scarier and more threatening.



#### **8. The larger an object is in a picture, the stronger it feels.**

We generally feel more secure physically when we are big than when we are little, because we're more capable of physically overpowering an enemy. One of the easiest ways to make a protagonist — or a threat — appear strong is to make it VERY large.



The same figure appears much more vulnerable if it is made very small. If we want to show a protagonist facing a terrible danger, the danger will seem much more threatening if it is huge and the protagonist is very small. We associate size with strength — strength of any sort.

This word *associate* is the key to the whole process of how picture structure affects our emotions. We know these pictures can't do us any more harm or make us any safer than a blank sheet of paper can, but we feel differently looking at different pictures because we associate the shapes, colors, and placement of the various picture elements with objects we have experienced in the "real" world outside the picture.

When we look at a picture, we know perfectly well that it's a picture and not the real thing, but we "suspend disbelief." For a moment, the picture is "real." (Notice how when we are analyzing pictures, we can step into and back out of this situation: one moment we let the picture affect us, and the next moment we step back and analyze the effect, largely — but never completely — unmoved.) We associate pointed shapes with real pointed objects. We associate red with real blood and fire. Specific elements such as points or color or size seem to call up the emotions we felt when we experienced actual sharp points or colors or noticeably large or small things. It is these "emotions attached to remembered experiences" that seem largely to determine our present responses.

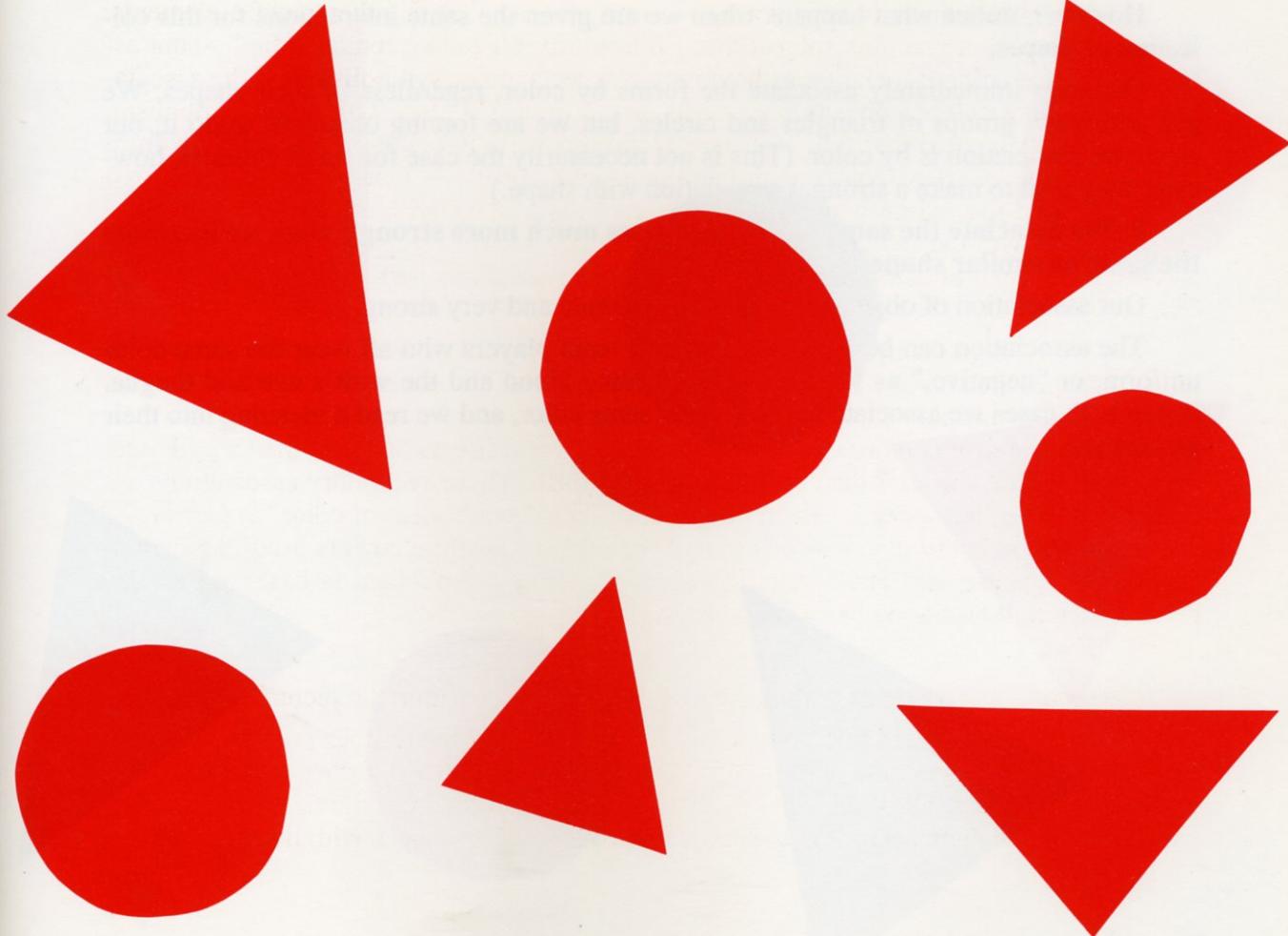


Color's effect on us is very strong — stronger than that of other picture elements. Color is also such a complex subject that I'll limit myself to two remarks, both about association. I see color association as having two aspects: color symbolism and the association of two like-colored objects seen at the same time. I'll start with color symbolism. We've already noticed that much of our reaction to various colors seems to result from our association of these colors with certain natural objects — that is, we associate red with blood and fire, white with light, snow, and bones, black with darkness, yellow with the sun, blue with the sea and sky, et cetera. I'll call these objects — fire, sun, sea, sky, and so on — "natural constants." Now these associations make perfect sense, and in many cases they must have helped us to stay alive.

But we then go on to make an interesting generalization. Just as we assume that all pointed shapes are sharp, we assume that everything with the same color as these "natural constants" *also* has their inherent qualities: a white swan seems more "pure" than a mallard duck, a red rose is more expressive of the blood and fire of our love than a pink one, a black crow looks nastier than a cuckoo, and so forth. These secondary associations are completely false, but we make them all the time. This "symbolism of color" is part of the way we function every day. Color is one of the most powerful elements used in advertising, in propaganda, and in all visual fabrications. Color symbolism is based on a false generalization. It also works — very, very well.

My second remark deals with objects of the same color within the picture frame.

Pretend for a moment that you are in kindergarten, and the teacher asks you to separate all of these shapes into two groups of similar elements. How do you immediately divide them? Almost all of us instantly distinguish the circles from the triangles. In other words, we divide them according to shape. We *associate* like shapes with like shapes.



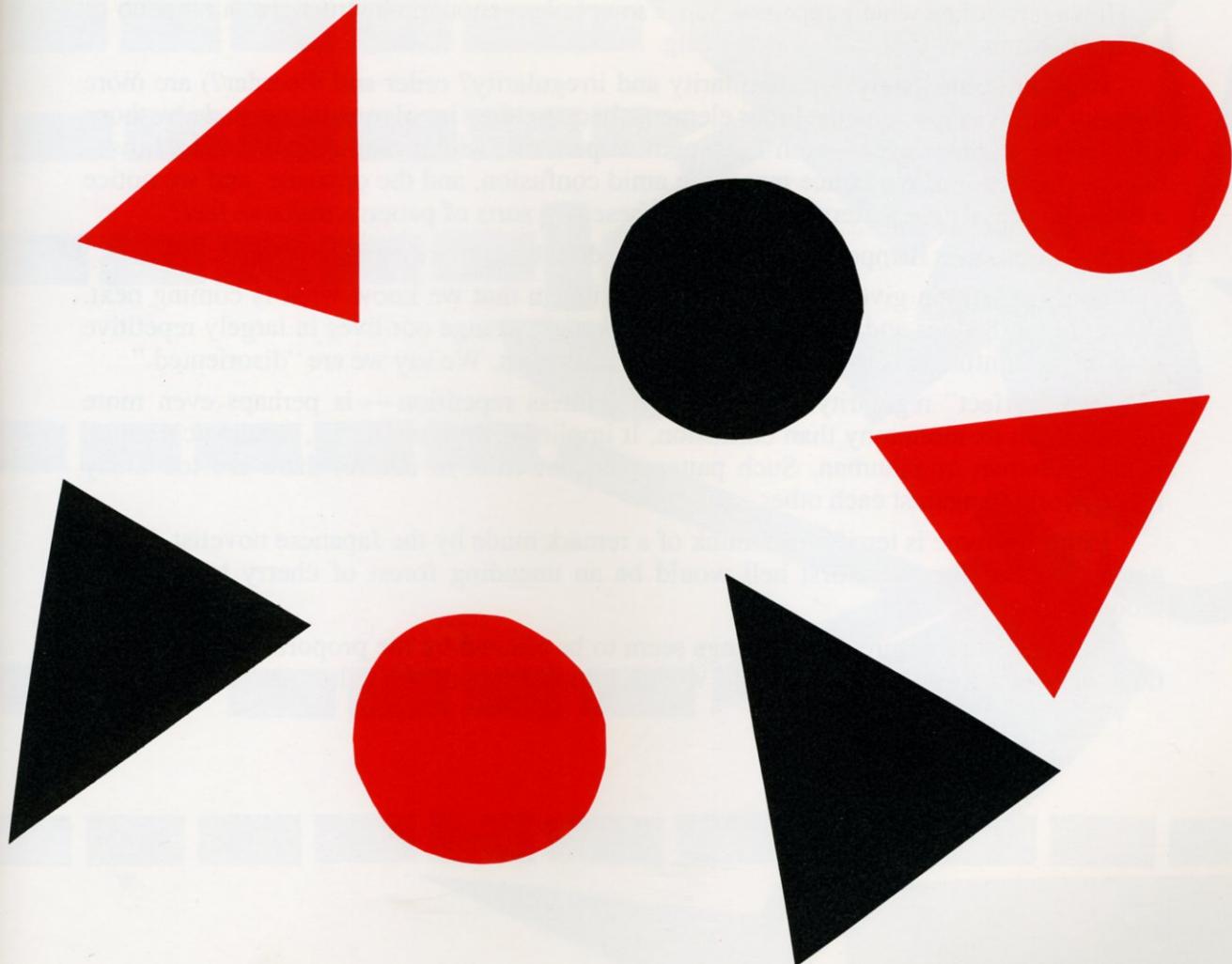
However, notice what happens when we are given the same instructions for this collection of shapes.

Our eyes immediately associate the forms by color, regardless of their shapes. We can still make groups of triangles and circles, but we are forcing ourselves to do it; our strongest association is by color. (This is not necessarily the case for small children, however: they tend to make a stronger association with shape.)

**9. We associate the same or similar colors much more strongly than we associate the same or similar shapes.**

Our association of objects by color is immediate and very strong.

The association can be “positive,” as with team players who all wear the same color uniform, or “negative,” as with Little Red Riding Hood and the wolf’s eye and tongue. But in both cases we associate entities of the same color, and we read a meaning into their association.



This page represents a situation that I'm not clear enough about to give a name to or call a principle, but that I can see working.

Repetition and confusion (regularity and irregularity? order and disorder?) are more difficult to talk about than the other elements because they involve patterns made by those other elements. Our eyes search for repetitive patterns, which enable us to "make sense" out of what we see. We notice repetition amid confusion, and the opposite, and we notice a break in a repetitive pattern. But how do these two sorts of patterns make us *feel*?

My question is hampered by the idea of "perfect" regularity and "perfect" chaos.

Some repetition gives us a sense of security, in that we know what is coming next. We plant our hedges and beans in orderly rows and arrange our lives in largely repetitive schedules. Confusion is more frightening for most of us. We say we are "disoriented."

But "perfect" regularity — continual, relentless repetition — is perhaps even more horrifying in its monotony than confusion. It implies a cold, unfeeling, mechanical mind, whether human or inhuman. Such patterns do not exist in nature; there are too many forces working against each other.

Either extreme is terrifying. I think of a remark made by the Japanese novelist Akutagawa, that for him the worst hell would be an unending forest of cherry trees in full bloom.

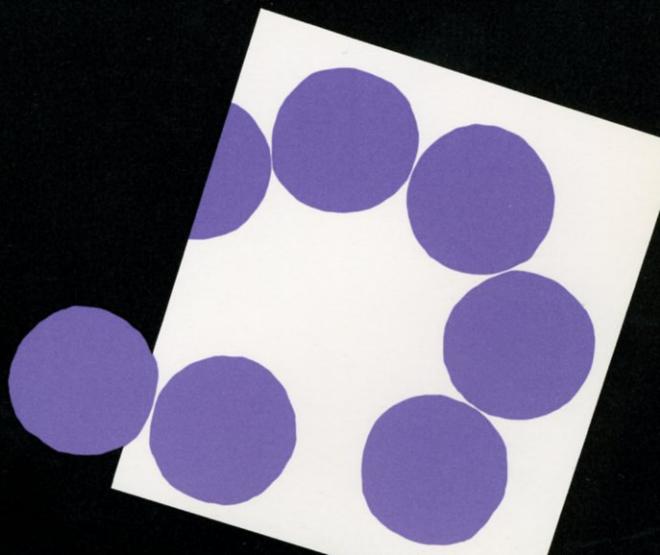
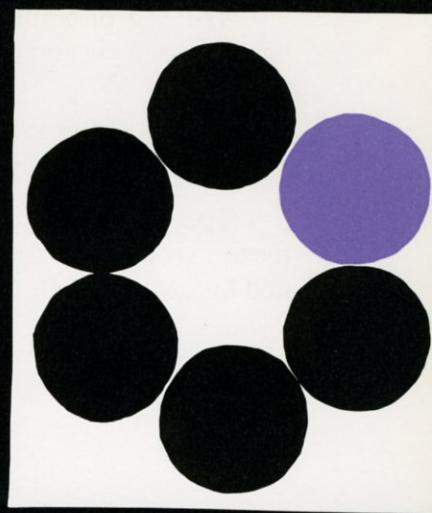
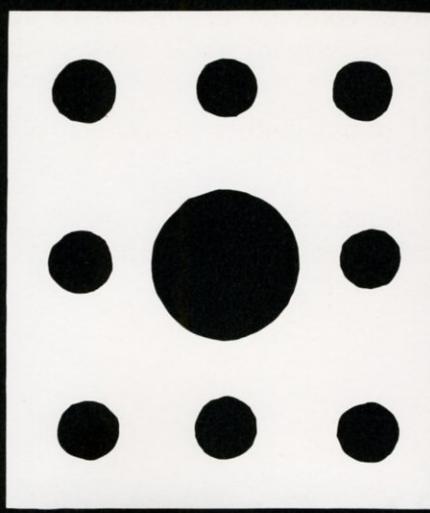
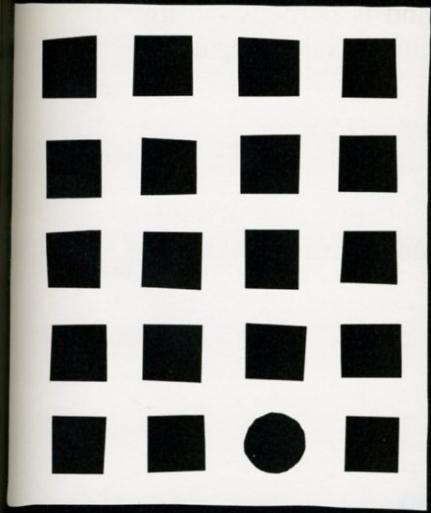
Life needs a mixture. Our feelings seem to be elicited by the proportion and "perfection" of regularity and irregularity, as well as by what shapes and colors are chosen.



The last principle involves combinations of all the others and is perhaps the most basic to our survival and to our way of understanding the world — and pictures. It is simply that

**10. We notice contrasts**, or put another way, **contrast enables us to see**.

The contrast can be between colors, shapes, sizes, placement, or combinations of these, but it is the contrast that enables us to see both patterns and elements. Pictures — and human perceptions — are based on contrasts.



you can always find a point such that the distance from it to each of the points in the triangle is at least as great as the width of the triangle. This is true because if you take any point inside the triangle, there will be some side whose width is greater than the distance from the point to that side. If you then drop a perpendicular from the point to the side, the distance from the point to the side will be less than the width of the triangle.

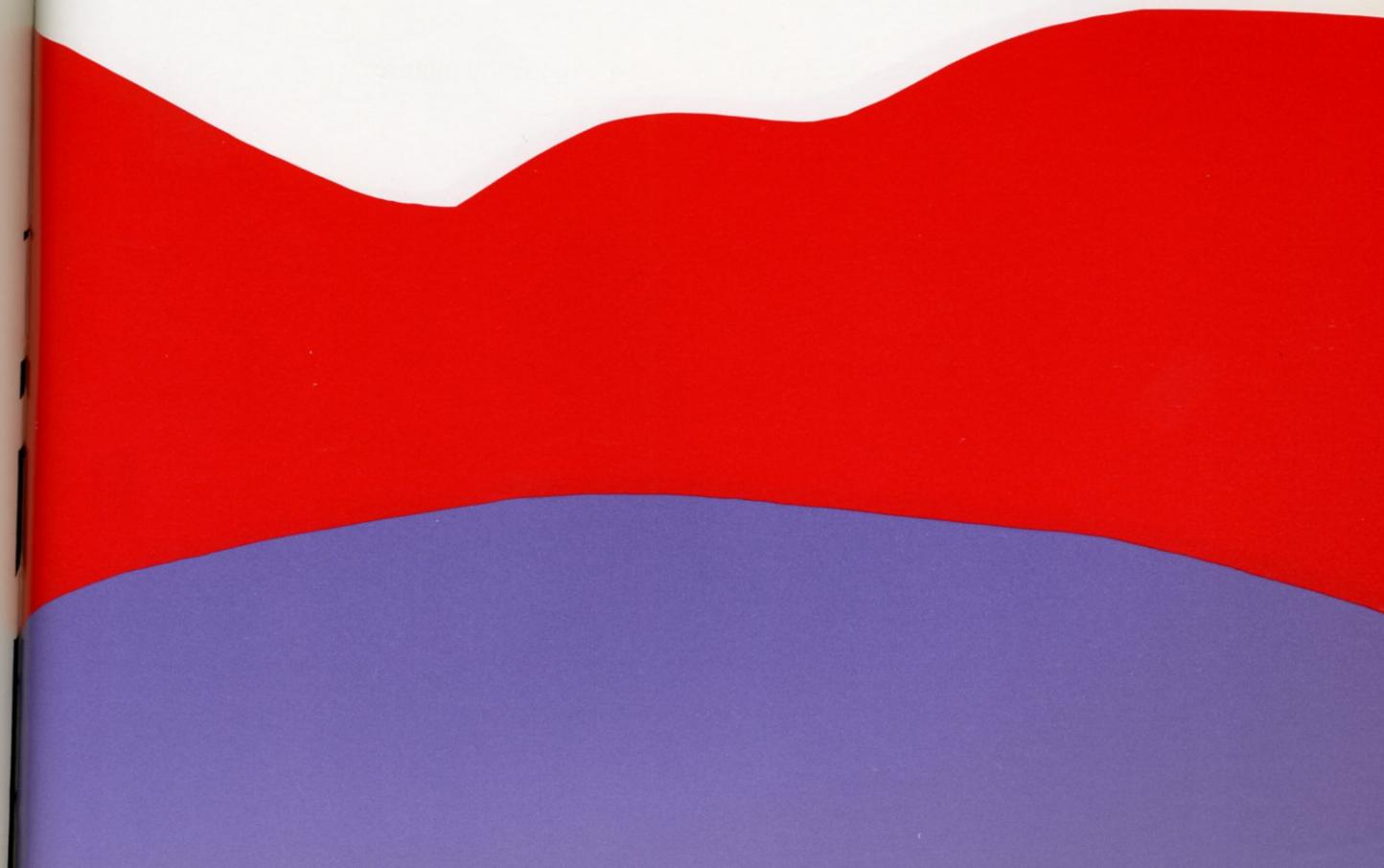
## Some Remarks about Space

Pictures are two-dimensional, whereas we live in three-dimensional space, with many more dimensions added by our passions and intelligence. When we translate or reform our multifaceted experience into this flat, rectangular format, we play with space.

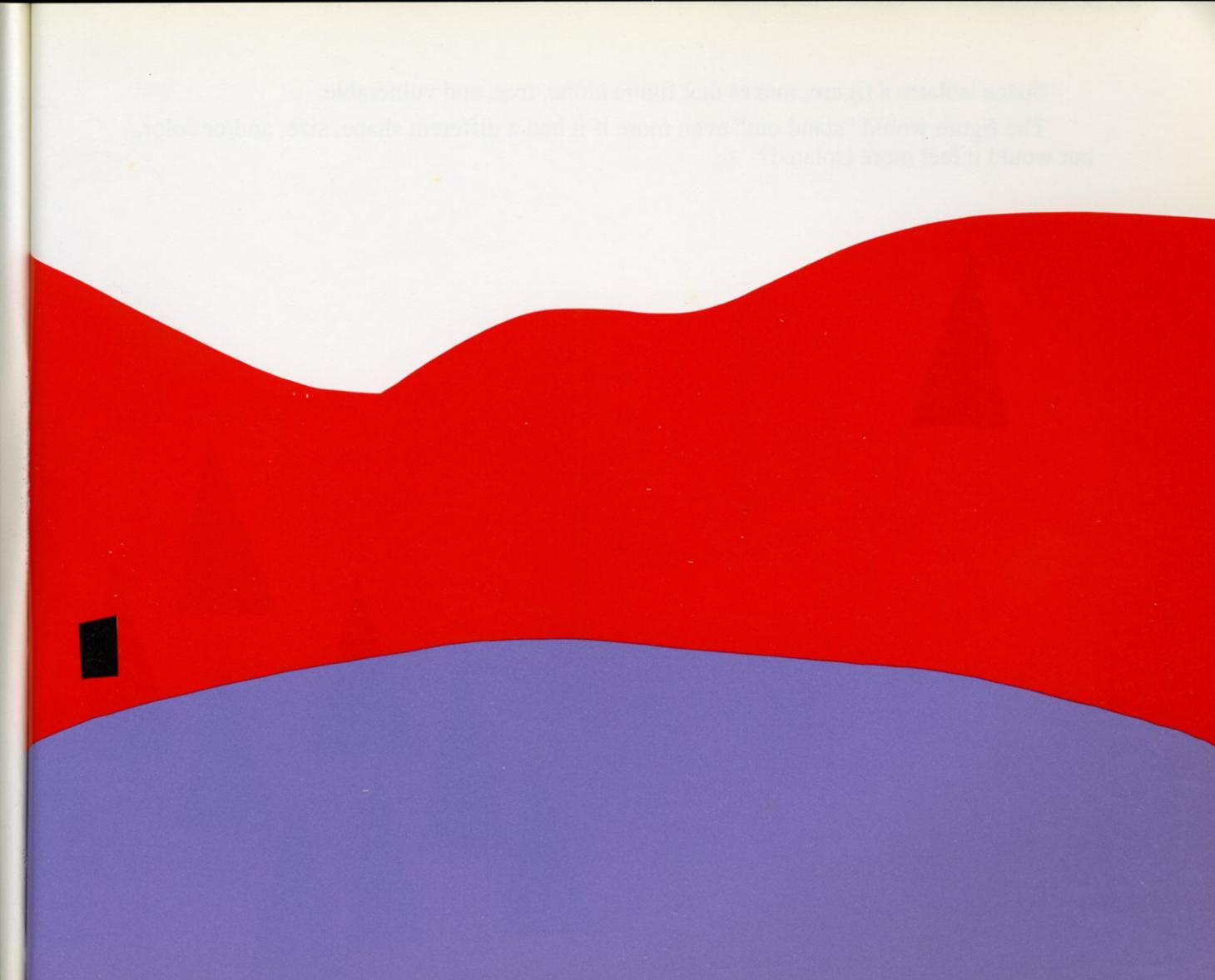
I'd like to look at a few features of picture space, not trying to find principles anymore, just noticing some things that happen.

The picture contains a space all its own. We exist outside the picture

que os corais brancos que se parecem ao "cimento" que os cíados e os  
homens usam para construir casas e estradas. Eles, que vivem em águas  
muito profundas, devem ser muito resistentes.



until our eyes fix on and “capture” an object inside it like prey — but the prey in turn draws us to itself inside the picture space.



Space isolates a figure, makes that figure alone, free, and vulnerable.

The figure would “stand out” even more if it had a different shape, size, and/or color, but would it feel more isolated?



We fill a space with objects of different shapes and sizes. The movement of the picture is determined as much by the spaces between the shapes as by the shapes themselves.



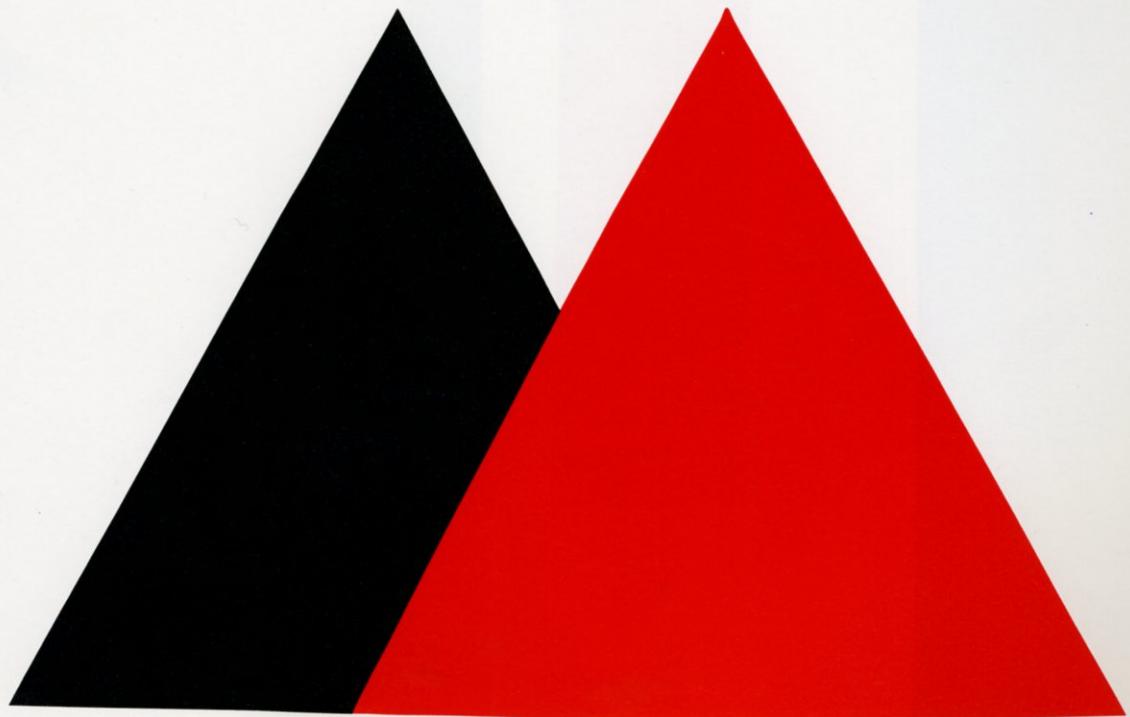
As soon as two objects overlap, the overlapping object "takes the space" of the covered one. Especially when we are beginning to make pictures, we feel this very strongly; it is hard for us to make one object overlap another. We want to leave each element as an integral piece, unbroken, inviolate. We want to allow space around each one.

The overlapping object "pierces" or "violates" the space of the other, but this also joins them together into a single unit.

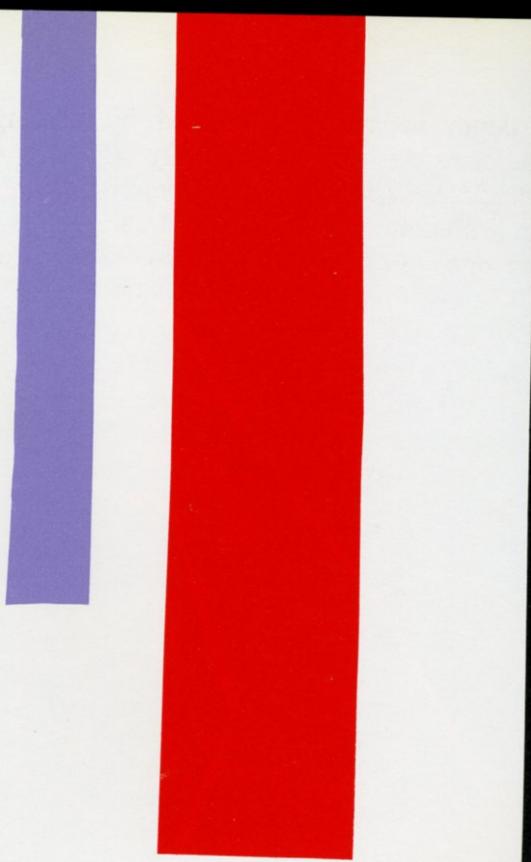
the following indicated with question marks, and the following  
responses are made to the original question:

Strongly agree/agree? Not really agree/agree? Not really  
disagree/disagree? Strongly disagree/disagree?

Balance/balanced/unbalanced? Unbalanced/balanced? Both/bot-



A sense of depth in space is created by placing the bases of progressively smaller/thinner and/or lighter objects gradually higher on the page. The effect is stronger if as the objects recede, the spaces between them decrease in a regular geometric progression rather than an arithmetic one — that is, if each space is one-half or one-third smaller than the preceding one, rather than each space being decreased by a consistent, fixed amount.

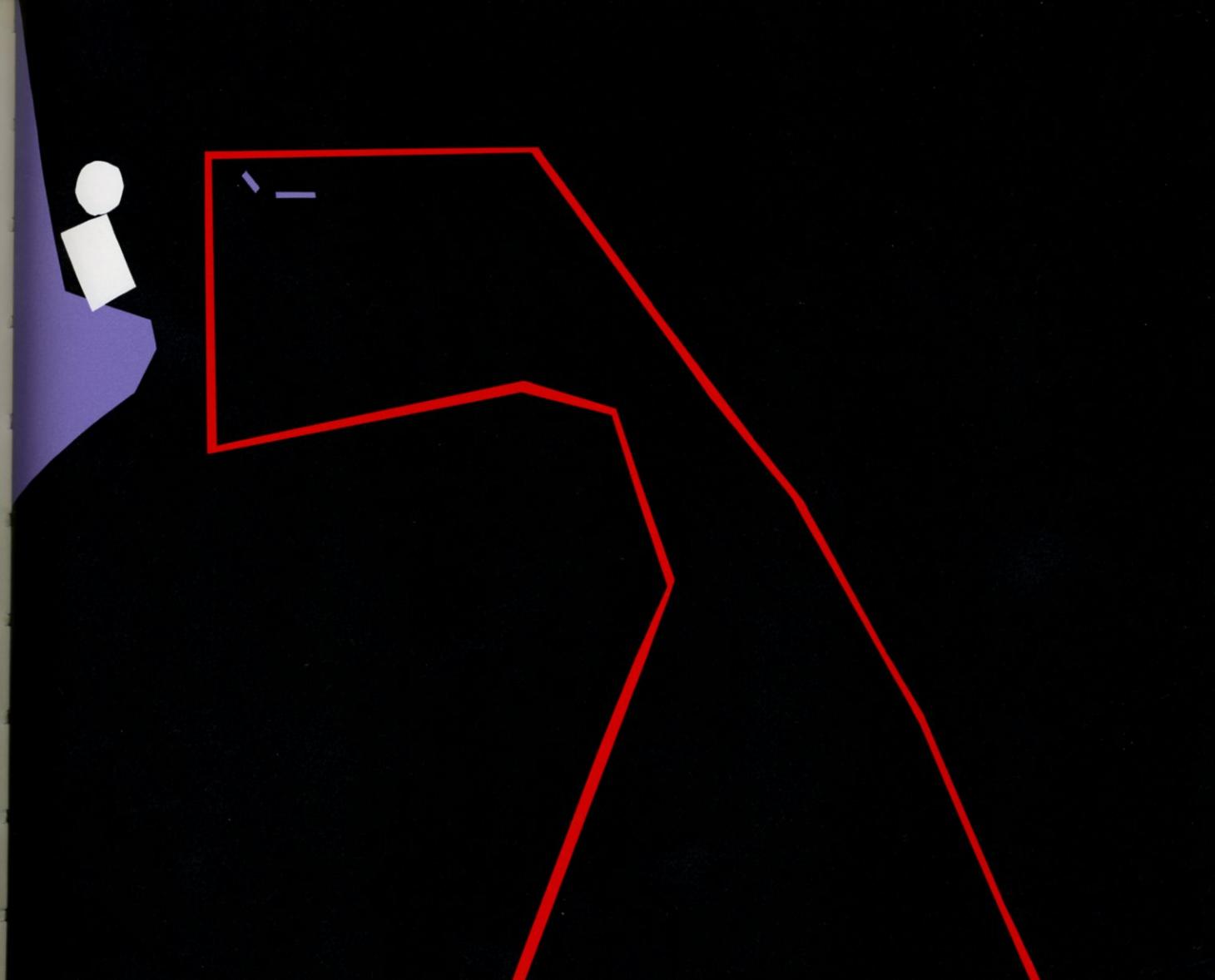


Space implies time.

This picture feels frightening to me, but part of me also wonders whether these two figures aren't just having a jolly old chat.

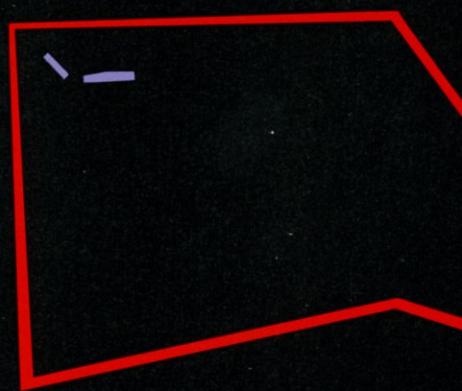
A threat doesn't feel so scary when it's right next to the victim, because there is no time for the victim to move before it gets devoured — and no time for us to be scared. The deed is a done thing.

I remember reading a story of Jack London's in which the protagonist was dying on the icy tundra and saw a wolf sitting not six feet away. He couldn't understand why the wolf looked so completely *friendly* until he realized that there was no reason for the wolf to be aggressive. The man was dead meat.



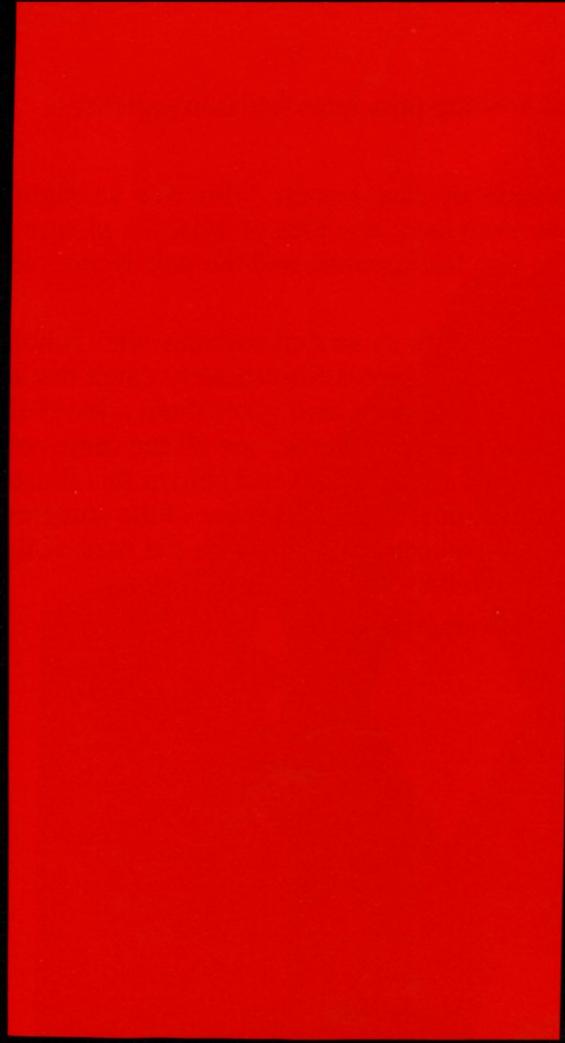
When the attacker and the victim are spaced far apart, I, as the victim, have more time to be scared. There are at least two seconds now before I'll be attacked, rather than the finest split second that I had before. We might be "cornered" in this picture, but there is more possibility of escape with the larger amount of space-time between victim and attacker. To put it in purely formal terms, there is more tension in the picture because the objects are "on edge" at the two poles of the page, separated from each other by the vast, diagonal empty space cutting through the center, but associated and drawn together by color.

Wide space can create tension between the divided objects,



but so can a sliver of space.

As space enables us to move, so space gives movement and life to a picture.



As a last exercise, I'd like to look at how the principles function together.

This is a rather remarkable illustration by Sue Jensen, who was an eighth-grader when she made it. Notice how before we even have any idea of what the picture is about, the white objects jump out at us from the rich background, and the pale figures are immediately associated with each other.

The picture shows a girl giving two treasures to an evil sorcerer who is holding her three brothers captive. Notice how the two white pieces immediately catch our attention, small though they are, and how readily their whiteness also gives them a jewel-like quality. The girl is associated with her three brothers because they are all the same color, even though (as a student pointed out to me maybe a year after I had shown this illustration to various classes) the shape of the brothers is almost the same as that of the sorcerer. Notice also how the sharp red central sorcerer is associated by color with the bars of the prison and with the walls of the jagged rock cave in which he lives.

The picture is extremely simple, and extremely effective.



## **Arranging Shapes on a Rectangle**

Why is cut paper such an effective tool for making pictures and for exploring picture structure?

First, construction paper is cheap, and it is familiar. It is easy to work with and eminently “nonthreatening.” For many of us, cutting construction paper puts us back into nursery school or kindergarten again — into a time when we got absorbed in the task at hand, with little thought of anything beyond the Right-Now-of-Making-This. It was a time of great absorption, or “flow,” a time when we all knew we were artists, or rather, when we didn’t worry about it one way or the other because we were absorbed not in who or what we *were*, but in what we were *doing*.

Second, working with cut paper encourages experimentation. Every piece of paper can be recut, repositioned, or replaced with a different piece or pieces. We can play with a single element while the rest of the picture stays exactly the same, and we can see how various changes in that one figure affect the whole. Cut paper is a perfect experimental tool, enabling us to play with picture structure in a way no other medium does. No paper shape we put on the page is “final” in the way a mark of paint or marker or even pencil is. A picture of cut pieces of paper becomes final only when we paste the pieces down — which is why nothing should be glued until we’re really satisfied. Playing with paper is making a series of beautiful “controlled” experiments.

Last of all, cut paper makes us concentrate on structure, emotional clarity, gesture, and overall cohesion rather than on line, detail, “realism,” or shading. Cut paper keeps us to the basics.

Then how do we go about *doing* this?

## **One exercise: a bird or birds attacking a victim**

I suggest a scary picture as a first exercise because scary pictures are the easiest.

Use only cut paper — no lines, no drawing the figures in pencil first and then cutting out the shapes. Work solely with paper and scissors, using three colors plus white. Have everyone in the group (and I can't suggest too strongly that you begin playing with shapes *with other people*; it is really much more effective than working alone) use the same three colors plus white, so you can get a sense of the range of variation within these limits. Keep the shapes as simple as possible, concentrating on *shapes that elicit an emotion or a sense of flight* rather than on the realistic representation of body parts.

Before you begin, ask yourself two sets of questions:

1. What is the essence of the person/creature/thing I want to represent? What specific elements in this situation evoke strong feelings in me? How can I accentuate these?
2. What feeling do I want to evoke with this picture, and what principles might I use to do this?

The first questions deal with the subject at hand, the second with emotions and principles. List the structural elements most essential for each category; in this case, you want to make an attacking bird(s), and you want to evoke fear. Keep returning to these questions when your picture doesn't seem to be working. The solution is almost always in one of the two categories.

## **Analysis**

When you feel you have done as well as you can, review the picture with the same questions in mind:

Does my picture communicate "essence of attacking bird"? Have I used the principles to evoke the feeling I want?

When we are just beginning, we often constrain our pictures in many of the same ways: we make all the elements fairly similar in size; we tend to use the center of the page and avoid the sides; we tend to divide the space into regular sections; we tend to go for realism rather than essence; and we tend to use only two or three of the applicable principles rather than all of them. And very often we sacrifice emotional impact for "prettness."

Do not worry about whether the picture is pretty. Worry about whether it is effective.

Review the picture with these points in mind. If the attacker is big, make it twice as big, and the victim twice as small. See if you can break out of the picture frame: can the attacker be so big it doesn't fit on the page? Can the victim be sitting on something that extends off the page? Look at the amount of space between the side of the page and the victim, the victim and the attacker, and the attacker and the other side of the page. Shift the pieces around to try different amounts of space around and between them. Do you want to "corner" your victim or isolate her/him? Does the attacker break through the picture frame or engulf it? Show that the attention of the bird(s) is focused on the victim.

Does the bird look like a sweet, plump, delicate, realistic silhouette of a sparrow, or does it look like a creature of flight, with nasty eyes and a dagger-sharp beak? Or does it have a hooked beak, with clutching talons, or is it a whole horde of sharp, dartlike creatures all aimed at one point, or a surrounding swirl of batlike forms? Which situation would most frighten you personally?

Restrict yourself to the aspects of a bird that most frighten you personally. Forget the others. If you are most afraid of talons, concentrate on making those scary, and ignore the beak. If you are most afraid of engulfing, suffocating wings, concentrate on those and make them huge, overwhelming, all-encompassing. Skip the claws and the tail feathers. You don't need to put in all the elements of a bird, just the aspects that frighten *you* most.

If for some reason you can't remember what a bird looks like, go to a place where you can observe *live* birds. Look not only at the tiny details, like how the claws are formed, but also at how the birds move, and see if you can translate those movements into the simplest geometric shapes. If you can't find live birds, use pictures and photographs. Don't concentrate on highly realistic renderings of birds; instead, look at abstract paintings of birds or of flight and movement. In every case, look for the essence and for what you feel and why.

Finally, go over each of the principles you have used and see if you can intensify them. If the beak is sharp, cut it in half and see if it is even scarier. If the background is light, see how it might look if it were bold or dark. If the attacker is high and the victim low, push them even farther apart, to their limits, or reverse their positions. Review the other principles and the section on space to see if there are aspects that you may have overlooked. Push the pieces of your picture around. Cut new ones. Replace one element with a piece of the exact same shape but another color. This is your private puzzle. Experiment with it.

Do not glue down the pieces until the whole picture **really** works. "Okay" is not good enough. You ask, "How do I know when a picture 'really works'?"

When a picture works, you and/or the others will know.

## **Further Exercises**

1. Choose an emotion. Represent this with appropriate colors and abstract shapes, then see whether others can identify the feeling you were attempting to portray.
2. Choose a painting that you particularly like. Placing the elements exactly, translate the painting into an abstract composition using only rectangles, circles, and triangles and three or four colors, to learn how the structure works.
3. Represent a situation that evokes a strong emotion:
  - a. snake(s), shark(s), rat(s), or spider(s) attacking a victim
  - b. a parent and child with water
  - c. people dancing
  - d. a child giving food to animal(s)
  - e. a person watering, tending, or planting plants
  - f. a person trapped in a cage/dungeon/flaming forest
  - g. a person triumphant upon conquering a bear/army/mountain
4. Illustrate a poem or series of poems, using the same three or four colors but representing different moods.
5. Illustrate a cover for a book, or a poster for a movie. (Ask yourself the same questions as for the other pictures, but add a further question: How can I most effectively use the letters to enhance the feeling I want to evoke? Look at how words are used on a variety of posters and book covers.)
6. Illustrate a folk tale or short story, again using the same limited colors throughout, eliciting appropriate emotions for each of five or six scenes. Try making the first and last pictures similar to each other but different, to give a sense of coming full circle but with changed feelings. Be sure to make a cover as well.

In each case, it seems most helpful to represent a situation that would particularly affect you personally. One of the most powerful "bird attacking victim" pictures I've seen was made by a woman who had been attacked by birds while rock climbing. One of the most powerful "parent and child with water" pictures was made by a woman for whom this workshop was the first time she had left someone else to care for her ten-month-old child for more than a couple of hours. One of the most moving pictures of a figure in the wilderness was made by a man who had just returned from two weeks walking alone in the desert.

Playing with cut paper forces us to concentrate on the basic structure and on how this structure affects our emotions. But this is the basis for all our visual art forms, the foundation upon which the rest is built. Once you understand how these principles work with paper, you can use them in any medium.

This is just the beginning.