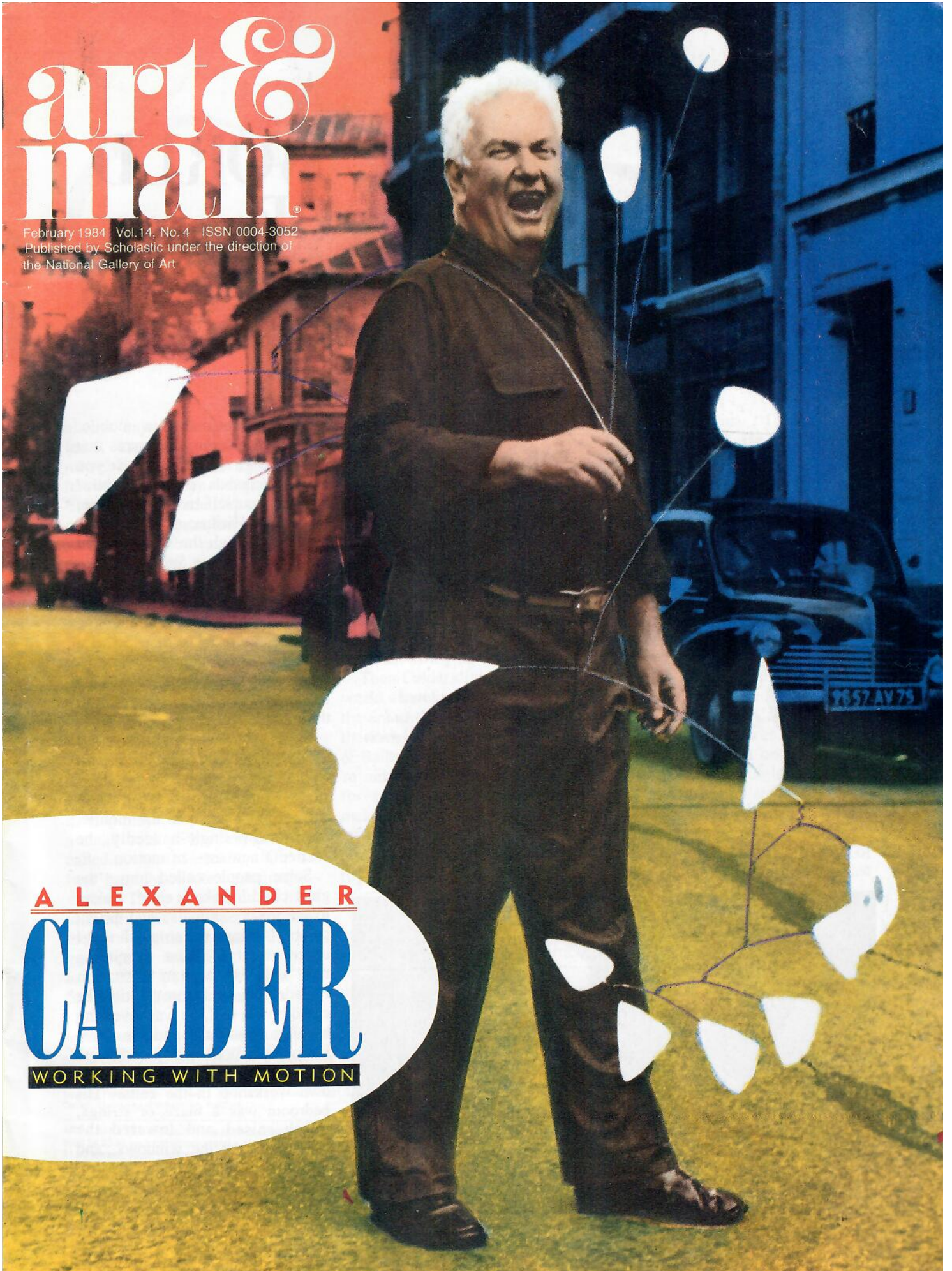


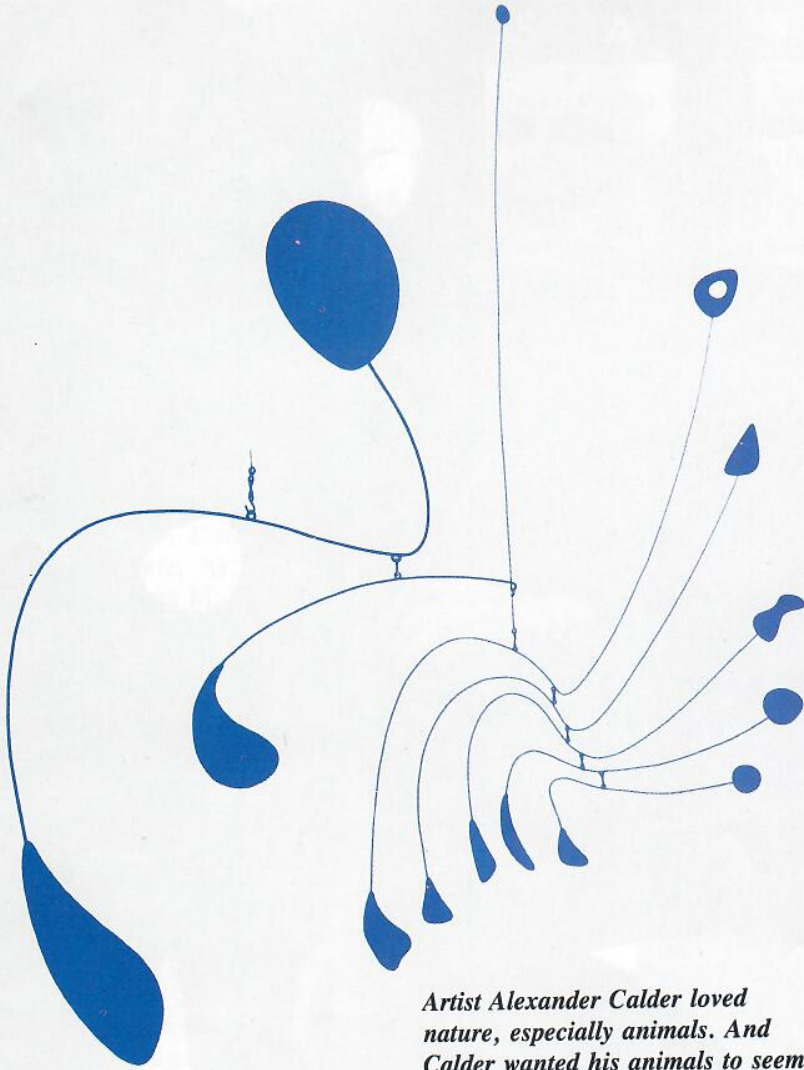
art & man

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ALEXANDER
CALDER
WORKING WITH MOTION

Hanging Spider, c. 1940. Mrs. John B. Putnam, Cleveland, OH.



Artist Alexander Calder loved nature, especially animals. And Calder wanted his animals to seem alive, so movement is the most important element in the spider above, the monkey at the right, and his circus lion, below.

Calder with *Circus Lion*, 1971.



A WORLD OF MOTION

Everyone has seen a mobile, those light hanging sculptures that glide through the air. But have you ever watched a *Calder* mobile? Imagine yourself in a quiet place, maybe your bedroom. A breeze is blowing through the window, and it hits the *Hanging Spider* (left).

What happens? For a moment, there's confusion. All the legs seem to move at once, but then the wind blows more softly. Slowly, gracefully—the mobile glides forward, first one long leg and then the other. The more you watch it, the more it changes.

Sixty years ago, mobiles didn't exist. Most sculptures were still "frozen" in clay, metal, and stone. But then, about 1930, Alexander Calder invented the mobile, and almost single-handedly, he created a new art—of motion.

Some people called him "the giant child." Like a child, Calder loved jokes, animals, and bright colors. ("I love red so much that I almost want to paint everything red.") He was born in 1898, near Philadelphia, and from the time he could hold a tool, he was inventing moving toys and gadgets from scraps of wood, wire, cork, and glass. By the age of 10, he had his own workshop in the cellar. His bedroom was a maze of strings, which raised and lowered the shades, closed the windows, and turned the lights on and off.

After high school, Calder went to an engineering college. He had



Zoo drawing: Monkey, 1925-26.

always enjoyed mechanical problems, especially making things move, but he couldn't find an interesting job when he graduated. Eventually he ended up as a fireman on a big ocean liner. The best part of the job was sleeping on deck where he could study the moon and stars. One morning he watched a sky he would never forget. "I saw the beginning of a fiery red sunrise on one side and the moon looking like a silver coin on the other." It gave him a sense of the universe, and the movement of the moon and stars. Later it would be a theme in his work.

The following year, at 25, Calder decided that what he really wanted to be was an artist. Again, motion played a part—this time in a small book of his first drawings called *Animal Sketching*. On the first page he wrote: "Animals—Action. These two words go hand in hand." He had spent hours at the zoo watching the animals. His goal was to draw them as simply as he could. Using a brush and ink for quick flowing lines, he not

"Just as one can compose colors, or forms, so one can compose motions."

—Alexander Calder



only captured the look of a monkey (see drawing above), but also its quick swinging movements.

Then Calder discovered a whole world of motion. It was the 1920s, the era of the big circuses. He saw the Ringling Brothers and Barnum & Bailey Circus, and he enjoyed it so much, he went back every day for two weeks. He decided to make his own small circus (below left). Slowly it grew to 55 people and animals that actually moved (by means of springs, cranks, strings, and even egg-beaters). His "performances" became legendary, especially when he moved to Paris and gave "circus parties" for all the artists there.

All this time Calder had been

working in wire. "I think best in wire," he said. He began making wire sculptures of animals, then of famous people, and before long he became known as the "wire king." Sometimes the sculptures had moving parts, like a talking mouth, or swinging hips on a dancer. Calder liked to hang these figures from the ceiling, where they could be struck by a breeze.

By now you know why Calder was *the* person to invent the mobile. By the time he died in 1976, at 78, he had created over 2,000 of them. In bright "Calder colors," this artist's sculptures can stand on the floor, or even on a wall. But most often, his mobiles hang from the ceiling. Some are so tiny, they could hang from your ear as earrings. The biggest one, three stories high, hangs from the roof of the National Gallery of Art's East Building in Washington, DC.

In the following articles, you'll find out more about Calder's mobiles, meet other artists working with motion, and develop your own special moving sculpture.

Maurice R. Robinson, Founder of Scholastic Inc., 1895-1982. For the National Gallery of Art: J. Carter Brown, Director; Ruth Perlin, Director of Extension Services. For Scholastic Inc.: Richard Robinson, President, Chief Executive Officer, and Chairman of the Board; Steven C. Swett, Publisher; Margaret Howlett, Editor; Janet Soderberg, Associate Editor; Dale Moyer, Editorial Design Director; Lisa Francella, Art Director; James Sarfati, Art Editor; Jane Fliegel, Production Director; Eve Sennett, Associate Production Director; Roz Sohnen, Photo Research.

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MOVING BEYOND REALITY

*“Why must art be static?
The next step is
sculpture in motion.”
—Calder*

Early in his career, Alexander Calder saw an exhibit of mechanical, twittering birds. His response was to make his first moving sculpture, the fish tank (below left). If you turn the crank at the bottom, the two wire fish wiggle back and forth. They move realistically and they also look real.

So how did it happen that, within a few years, Calder's sculptures began looking like the abstract *Lobster Trap and Fish Tail* shown on the right? The answer lies in Paris, the city in which Calder had lived since 1926. There he met artists with completely new ideas about art. For them, realism was dead. They believed in *abstraction*. Out of pure shape, line, and color, they were creating a new language of feeling—one that no longer mirrored the world, but *suggested* it. Calder was interested, and one day he visited the abstract artist, Piet Mondrian.

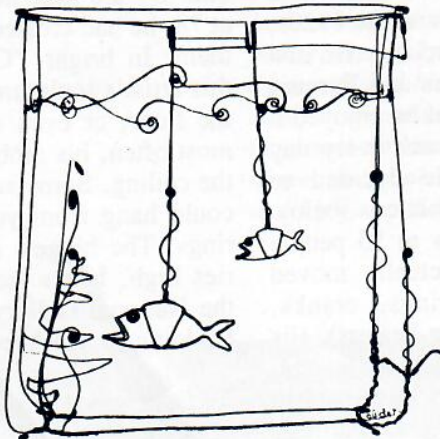
On the wall of Mondrian's studio were bright red, blue, and yellow rectangles. It was clear that the artist had been playing with their positions, moving them around, trying them this way and that. But Calder thought, “*What if they moved by themselves?*” Mondrian wasn't interested. For Calder, it was the start of a new art—one of colored forms moving through space. It was a vision that would last a lifetime.

Calder's first abstract “mobiles” moved by using cranks and small motors. Like little machines, they buzzed and whirred, and small colored balls would spin like planets in the solar system. Soon Calder grew bored. Fuses blew, strings needed tightening, and the repetitious patterns left Calder with no surprises. These mobiles had “too many bugaboos.”

Like a scientist, Calder continued his experiments with movement and abstract form. His model was the universe where circles of all different sizes and colors float in space. He also thought about *balance*, and how perfectly balanced objects of equal weight and size can drift freely in a breeze. He kept working on these ideas of movement and balance until the colored shapes took on a life of their own—suggesting moons and stars, or shapes in the natural world. By using a force of nature, the wind, to power his sculptures, they now moved freely, not mechanically.

Try to imagine some of the many movements of *Lobster Trap and Fish Tail*. Which parts look like they would go up and down? Which ones might spin in a slow, gentle circle? Which pieces might flutter or ripple like the fins of a fish or the tail of a lobster? This abstract mobile may not look real, but its movements suggest a whole world under the sea.

Fishbowl with Crank, 1929. Private collection, N.Y., NY.



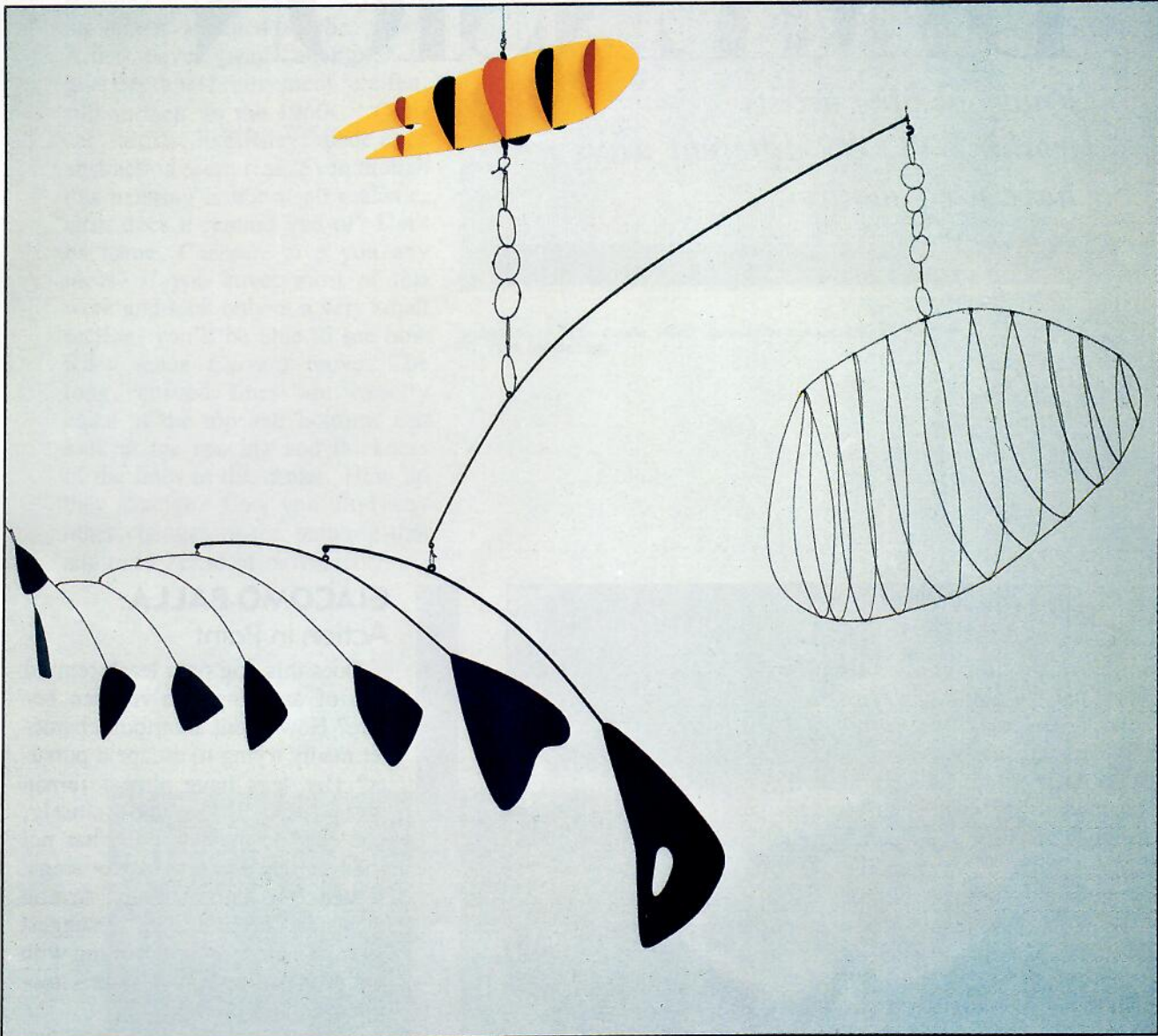
The wire fishbowl was one of Calder's first moving sculptures.

BRIDGET RILEY

Moving Lines

Can you find the fish shapes that “swim” in the breeze?

BRIDGET RILEY



Lobster Trap and Fish Tail, 1939. Collection, the Museum of Modern Art, N.Y., NY. Commissioned by the Advisory Committee.

Ten years later, Calder did this hanging mobile. Can you find the fish shapes that “swim” in the breeze?

A NEW DIMENSION

*Find out how artists
working in very different ways
have used motion.*



Giacomo Balla (1871-1958). *Dynamism of a Dog on a Leash*, 1912. Albright-Knox Art Gallery, Buffalo, NY. Bequest of A. Conger Goodyear to George F. Goodyear, life interest, and Albright-Knox Art Gallery, 1964.

GIACOMO BALLA: Action in Paint

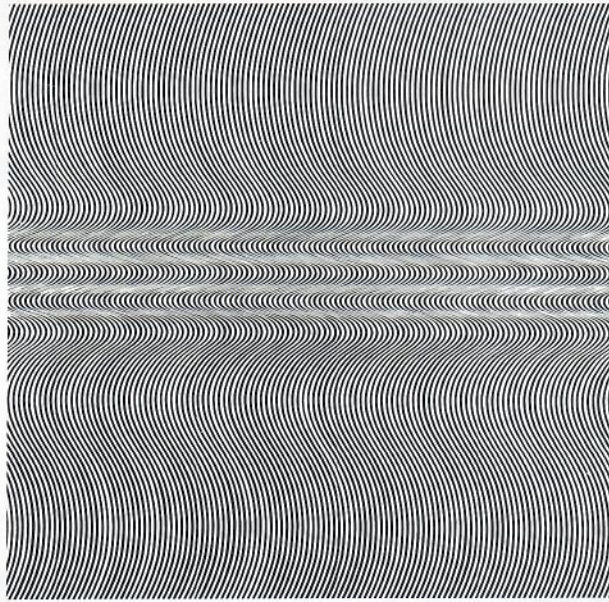
Does this dog on a leash remind you of anything you've seen before? How about a cartoon character madly trying to escape a pursuer? Her legs have almost turned into wheels. If you look closely, you can see that the artist has not tried merely to capture *one* single instant. He has combined several views and blurred them to suggest speed. (Compare this painting with the blurred photo of Calder's mobile on page 11.)

This device for showing movement was used by Italian artist Giacomo Balla in the early part of this century. He wanted people to feel they were actually *inside* his paintings. And, in fact, we *can* almost feel this scurrying terrier tugging on his leash. What do his many legs and tails have in common with the lines in the painting?

BRIDGET RILEY:

Moving Lines

Can you look at this painting for very long? How has British artist Bridget Riley made simple black lines look as though they are constantly in motion? They seem to shimmer and ripple as if they were no longer attached to the paper. Artists have always attempted to give depth and movement to a flat, still surface. In the 1960s, "Optical" artists, like Riley, made even abstraction seem real. Even though this painting is not at all realistic, what does it remind you of? Does its name, *Current*, give you any ideas? If you cover most of this work and look only at a very small section, you'll be able to see how Riley made *Current* move. The long, curved lines are exactly equal at the top and bottom. But look at the spacing and thickness of the lines in the center. How do they change? Can you find any other changes in the painting that add to its sense of movement?



Bridget Riley (b. 1931). *Current*, 1964. Collection, The Museum of Modern Art, N.Y., NY, Philip Johnson Fund.



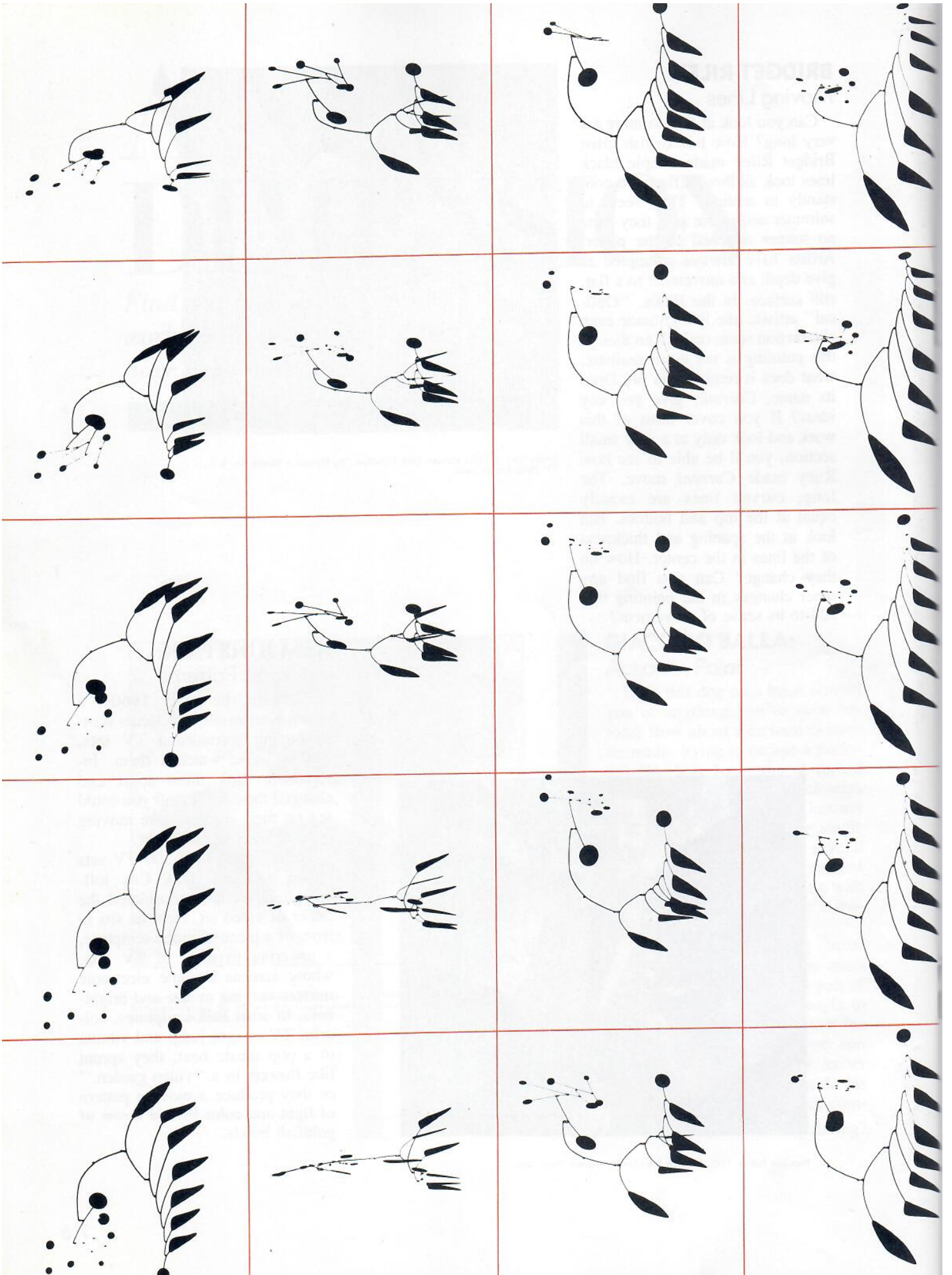
Nam June Paik (b. 1932). Photo by Elliot Erwitt, Magnum Photos, Inc.

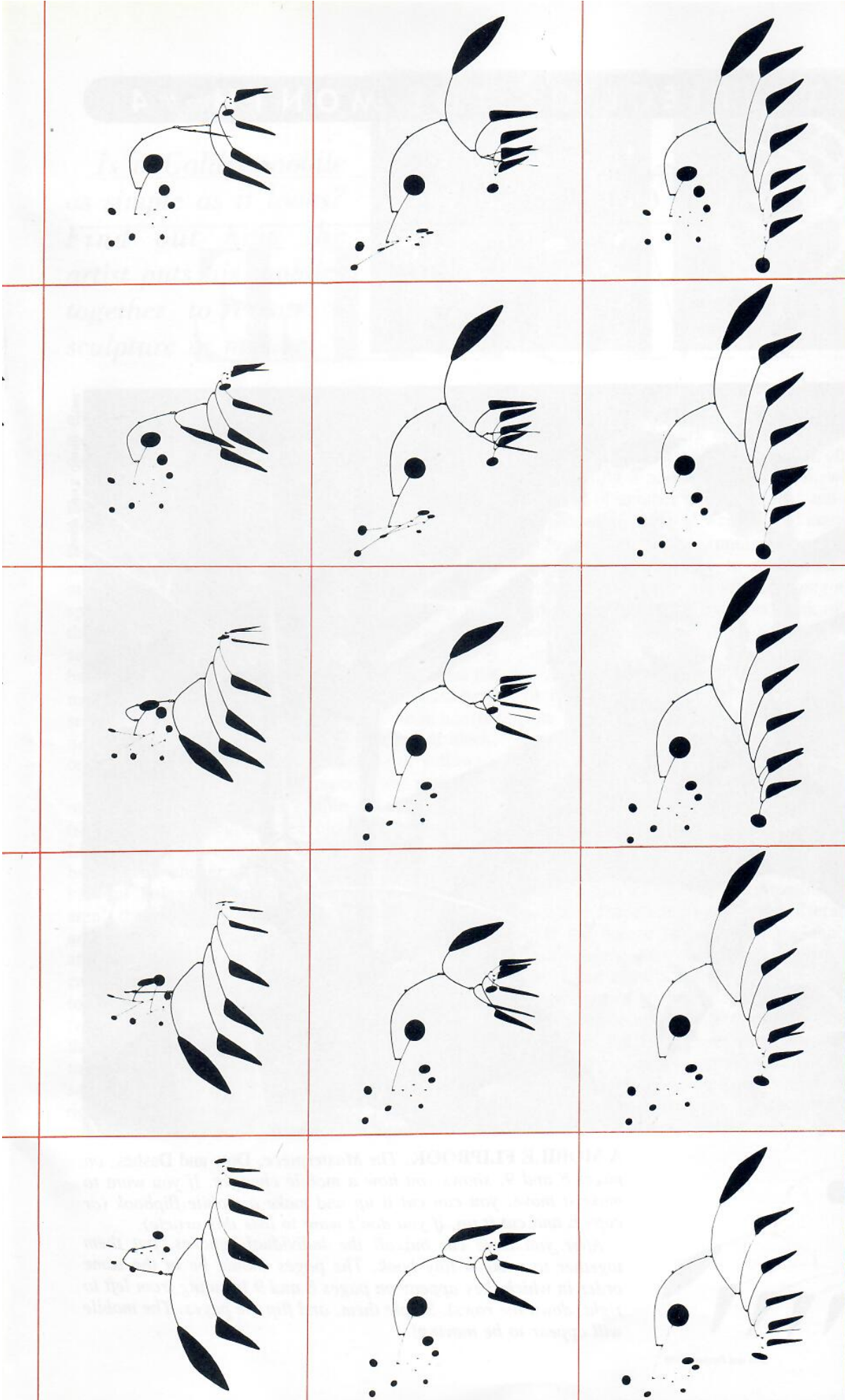
NAM JUNE PAIK:

Electronic Patterns

Back in the early 1960s, a young Korean-born musician started buying secondhand TV sets. But he never watched them. Instead he took them apart and changed them so that all you could see on their screens were moving patterns of electronic light.

Today, more than 100 TV sets crowd his New York City loft. Nam June Paik is considered the father of video art. Here he sits in front of a piece of video sculpture, a towering pyramid of TV sets, whose screens become electronic mirrors varying in size and brightness. In other Paik sculptures, colorful TV images jump and vibrate to a pop music beat, they sprout like flowers in a "video garden," or they produce a moving pattern of light and color behind a row of goldfish bowls.





Alexander Calder (1898-1976). *Dots and Dashes*, 1959. Painted sheet metal and wire. Collection of Howard and Jean Lipman. Photos by Jerry L. Thompson. (From *Alexander Calder and His Magical Mobiles* by Jean Lipman, published by Hudson Hills Press.)

ART AND MAN MASTERPIECE OF THE MONTH #4

DOTS AND DASHES

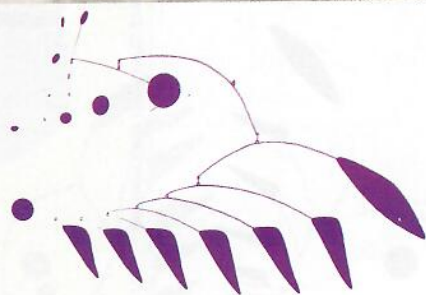
BY ALEXANDER CALDER

CALDER CREATES

A MOBILE



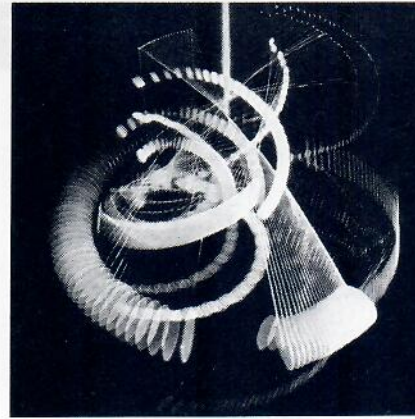
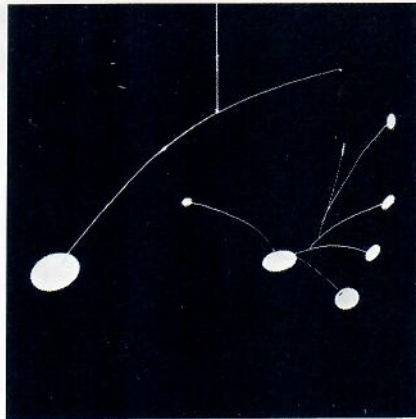
Photo by Pedro E. Guerrero, c. 1964.



A MOBILE FLIPBOOK. *The Masterpiece, Dots and Dashes, on pages 8 and 9, shows you how a mobile changes. If you want to make it move, you can cut it up and make a mobile flipbook (or copy it and cut it up, if you don't want to lose this article).*

After you have cut out all the individual squares, put them together to make a tiny book. The pages should be in the same order in which they appear on pages 8 and 9 (reading from left to right, down the rows). Staple them, and flip the pages. The mobile will appear to be moving!

Is a Calder mobile as simple as it looks? Find out how the artist puts his mobiles together to create a sculpture in motion.



Hanging Mobile, 1936. Private collection, Paris. Shown at rest and in motion.

Calder could create a mobile in a day. He worked efficiently in a big cluttered barn in Connecticut. His tools were shears and pliers, never power tools, because he wanted his mobiles to look handmade.

First he'd make a scale model. Using sheets of paper-thin aluminum, he'd cut out several rough shapes. Other shapes might be scraps he'd just happen to find—left-overs from other mobiles. These shapes would come to life in his mind and suggest other shapes. Soon he would have 20 or 30 of them spread out on a board. He would begin playing with them, selecting and discarding, until he had a composition he liked. A few hours later, his thick, stubby hands would have delicately wired and balanced the mobile, and maybe some passing breeze would have set it in motion. The final version would be in heavier metal and wire. Then he would paint it red or black, or one of the other primary colors (blue or yellow).

The most critical part of the process was getting the mobile to balance. In the simple *Hanging Mobile*, (shown above), you can see clearly how it works. Like a scale, the weight of the big circle on the left balances the cluster of smaller ones on the right. This kind of balance is *asymmetric* because the shapes aren't the same on each side of the "scale." In *Dots and Dashes*, the mobile in motion shown on pages 8 and 9, the balance looks more complicated, but you can still see how the group of round shapes are equal to the large dash shapes on the bottom. To make these two groups of shapes balance, Calder had to find just the right point on the long curved wire in the middle to attach the hanging wire. "This is crucial," Calder said, "as there is only one such point, and it must be right if the object is to hang or pivot freely."

Notice in both these mobiles how all the shapes,

and wires connecting them, progress from small to large. This is also how Calder worked: "I begin with the smallest and work up. Once I know the balance point for this first pair of discs (or other shapes), I anchor it by a hook to another arm, where it acts as one end of another pair of scales, and so on up. It's an ascending scale of weights and counterweights."

Progression (things running from small to large) is the most exciting way to repeat the same shapes, because it suggests growth. In *Hanging Mobile*, the progressive lines can make us think of the veins in a leaf. The increasing discs could be small moons, larger planets, and suns.

At rest, Calder's mobiles show us elegant patterns of big solid shapes balanced and connected by the fine flowing lines of their wires. But when a breeze hits them, a new rhythm takes over. Now the mobiles begin to form graceful invisible arcs in the air, as you can see in the photo of *Hanging Mobile* (above, far right). The shapes are like a group of dancers. Each one is moving, and they are constantly regrouping and coming together in new arrangements. Just look at the changes *Dots and Dashes* went through on pages 8 and 9! And look at how the parts change in size and shape when seen from different angles.

If the breeze isn't steady, the mobile stops and starts—sometimes wobbly, sometimes smooth. It shifts and reshifts, like a turning skier redistributing the weight of his/her body.

We can compare mobiles to many moving things—even life itself. Nothing stays the same in life [or mobiles], especially today. Change is constant and we are always shifting to meet new demands. With the everchanging mobile, Alexander Calder invented a new kind of sculpture for a new age.



Photo by Janet Soderberg

Darren Olivero with his Scholastic Award-winning sculpture.

Darren Olivero:
**SCULPTING
FROM
NATURE**

In 1982, when Darren Olivero was a freshman, he made a little sculpture out of matboard. Now, more than a year later, a giant Plexiglas version sits in the corner of his bedroom. What does this sculpture seem to be about? Does it suggest any kind of movement? Is the title a clue—"Tide Out at Misty Bay"?

Darren, 16, attends the Prairie School in Racine, Wisconsin, and we visited him there to find out more about his work. This was his first abstract sculpture, but he's been designing imaginary houses for several years. Art, theater, and architecture are his big interests.

How did you get the idea for this sculpture?

The very first day of school, we were assigned to make 10 little sculptures out of matboard. I wasn't too thrilled, because I wanted to work in metal. But one night I was working on it at home. I cut out a piece and I thought, "Oh, that's interesting." It wasn't meant to be anything, but it looked like a shoreline with a wave and a hill. I got that impression from just this one first piece (the base piece in front).

I also thought of the name right off—"Tide Out at Misty Bay." It came right after I'd added another similar piece in back. It was almost like the first piece, but larger. I think my interest in theater played a part here. Because when you're doing backdrops, you have larger sections in back and smaller ones in front. It kind of suggests distance.

Do the upper pieces represent mist?

Yes, I knew the sculpture had to be more interesting than just a seashore. The idea of mists and clouds seemed to bring more mystery to it.

The big curved piece is mostly just structural to hold up the clouds, though some people say it reminds them of a shark's fin. I don't see that at all.

What came next?

My teacher said we should think about making it bigger. We needed to make it out of something sturdy, so we decided on Plexiglas. I liked the idea of using a modern material with an old subject like the sea.

In the larger sculpture, you've added three long pieces that go through the clouds.

I see them as sunrays, and they're the best part of the whole sculpture I think. See, we had a real problem. In Plexiglas the clouds would be way too heavy to stay up by themselves. My teacher had suggested a framework of clouds, but that wasn't what I wanted. It wasn't simple enough.

One night in bed, I finally came up with the idea of sunrays. The bed is where I do most of my thinking—before I go to sleep.

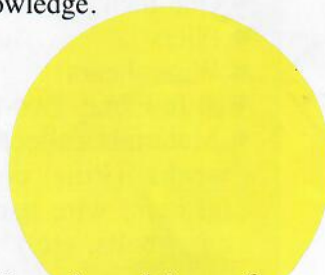
Sunrays fit right into the scene. I love it when there's rain or mist and you can see the sun filtering through the clouds. It's almost holy. It gives me a real surge.

How did you enlarge the sculpture after you finished the model?

I took a piece of brown wrapping paper, gridded it off, and basically enlarged it square by square. It was boring and took a lot of time. Then I was hit with the Scholastic Art competition. My teacher suggested I enter it, but unfortunately the sculpture could only be two feet maximum and mine was going to be twice that. So I had to stop with the big one and make a smaller one!

What was the hardest part on the big one?

The sunrays, because of the way they go through the clouds. It was difficult getting the measurements for the holes I had to cut in the clouds. I had to make a full-size cardboard model for trial and error. My dad helped me out with the math, using theorems and things. It was the first piece of art I ever had to use anything academic for. It was almost like engineering, and it changed my whole idea of art. Art isn't just emotion. You have to have intelligence and knowledge.



Will you keep doing art?

Yes, I'll always love it. But mostly I think it will be for my own enjoyment. I like the fact that it's something I can do alone—unlike theater where you work with tons of people. Art helps you to imagine things, imagine ideas—and so it helps you in other areas.

Is there any advice you could give students serious about art?

Take the ideas you get from class and build on them on your own time. If you really enjoy art, that's what you'll do.

You never know what will strike you. With this sculpture, I accidentally cut out a shape that started the whole thing. But it wasn't really an accident. There was something of me in it. Look for things like that.

MAKING A “NATURAL” MOBILE

Create an extraordinary sculpture from the ordinary objects you see around you every day.

MATERIALS

- Aluminum wire (12 and 16 gauge)
- 70 lb. nylon fishing cord
- One-inch paper clips
- Pliers
- Wire shears
- A few one- two-foot branches
- Materials collected over several weeks (Pine cones, flowers, feathers, wire hangers, washers, nuts, bolts, etc.)

In this issue, you've seen how Alexander Calder created "abstract" mobiles based on nature. Most of these moving sculptures are made up of the simple forms that Calder cut out of metal and wire. But Calder also made mobiles using natural and ready-made materials—shells, toys, coffee cans, spoons, pieces of glass. In this workshop, you will create an unusual moving sculpture from familiar materials which will seem to take on new meanings as you combine them.

STARTING OUT

STEP 1. Begin by studying all the found objects. Which do you like best? Think about their *size* and *weight* and how they will look together.



STEP 2. Hang a long cord to light, using a bent paper clip. Select arm (natural or man-made) and attach to the cord. Use two or three knots. Remember, the arm does not have to hang from the exact center.



Photos by Janet Soderberg

STEP 3. Begin choosing objects and balancing them. You can hang everything from one long arm, or you can add more arms on each side.

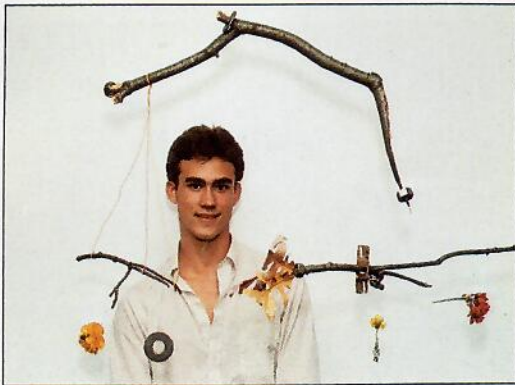


STEP 4. Balance each object as you add it. And study each new object as it moves. It is very important that it clears the other parts, so your mobile can move freely.

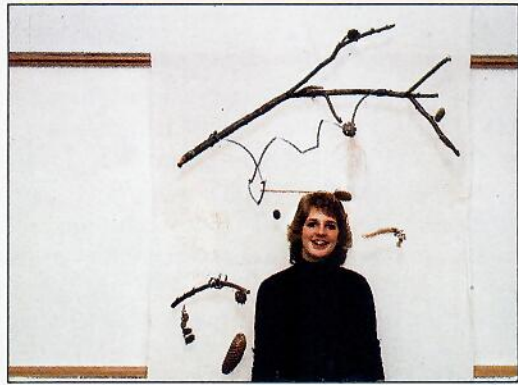


SOME SOLUTIONS

The more arms you add, the more complex your mobile will be. Objects added to the arms make them part of the sculpture. Will color be important in your work?



Your main arm can be simple or very complex. How many different kinds of objects has this artist used? Why is this sculpture *assymmetrical*?



You can create an "all natural" mobile. Washers and nuts might be attached to objects for weight as well as shape. And, think how your mobile will look from every angle.



The top arm doesn't always have to be a *horizontal* line. (What is it here?) Try hanging objects in a long, *vertical* row. Is this work balanced *symmetrically* or *asymmetrically*?



Prepared by Ned J. Nesti, Jr., Morrison High School, Morrison, IL.

ARTS ALIVE

Alexander Calder used nature to create his famous mobiles. There are many other ways to work from nature, as you can see at these three new exhibitions.

"REAL" NATURE

Before Calder did the "abstract" mobiles you've seen in this issue, he had to learn to draw nature "realistically." Some of the finest landscape and portrait drawings done directly from nature were created by John Sargent, a famous 19th-century American artist. You may be able to see many of them in the traveling show *John Singer Sargent: Drawings from the Corcoran Gallery of Art* at the Fine Arts Museum in Mobile, AL, until March 4. It will then be at the Oklahoma Museum of Art, Oklahoma City, Mar. 24-Apr. 22; Cummer Gallery, Jacksonville, FL, May 12-June 10; Hunter Museum, Chattanooga, TN, June 30-July 29; Laguna Beach (CA) Museum, Aug. 18-Sept. 16; Snite Museum, Notre Dame, IN, Oct. 6-Nov. 4; St. Petersburg (FL) Nov. 24- Dec. 23.



John Singer Sargent (1856-1925), *Romantic Trees*, 1871. Corcoran Gallery of Art, Washington, DC.

NATURE ABSTRACTED

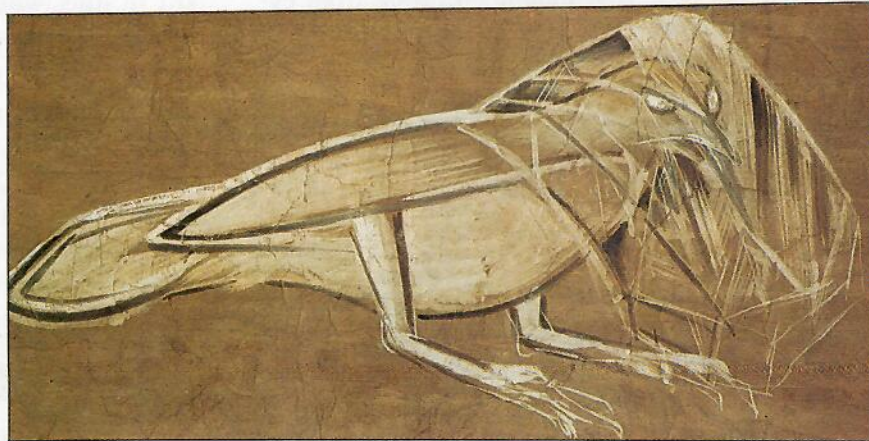
Artists of ancient China wanted to capture the "inner life" of a subject. This ceramic dog, with its long neck and pointed ears, represents all dogs. You can see this 2000-year-old work and many other masterpieces from China in the exhibition *Treasures from the Shanghai Museum* currently at the Field Museum in Chicago through Feb. 14. It will then travel to the Museum of Fine Arts, Houston, March 16-July 9, and the Thomas M. Evans Gallery at the Smithsonian, Washington, DC, Aug. 11-Nov. 30.



Dog, Han dynasty (206 B.C.-220 A.D.), brown glazed pottery. Photo from the Asian Art Museum of San Francisco.

NATURE INTO SYMBOL

Is this drawing, *Trapped Bird*, a "realistic" picture of a bird you might see out your window? Twentieth-century American artist Morris Graves used animals and birds as symbols to represent human emotions. You can see more than 100 of this imaginative artist's works in *Morris Graves: Vision of the Inner Eye* now at the Oakland (CA) Museum until March 25. Then it will go to the Seattle Art Museum, April 19-July 8, and the San Diego Museum of Art, July 24-Sept. 4.



Morris Graves (b. 1910), *Trapped Bird*, 1938-39. Collection Robert J. Massar, NY.