

Problem Seeking and Problem Solving

Artworks are generally experienced visually. By learning the basic elements of design and exploring many approaches to composition, you can increase the visual power of your work. Composition, however, is only part of the puzzle. With the increasing emphasis on visual communication around the world, the ideas being expressed by artists and designers have become more varied and complex. Conceptual invention is just as important as compositional strength. New ideas invite development of new types of artwork. When the concept is fresh and the composition is compelling, expression and communication expand.

PROBLEM SEEKING

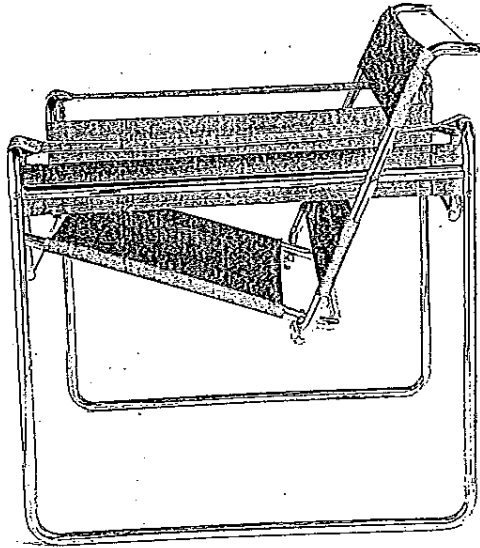
The Design Process

In its most basic form, the design process can be distilled down to four basic steps. When beginning a project, the designer asks

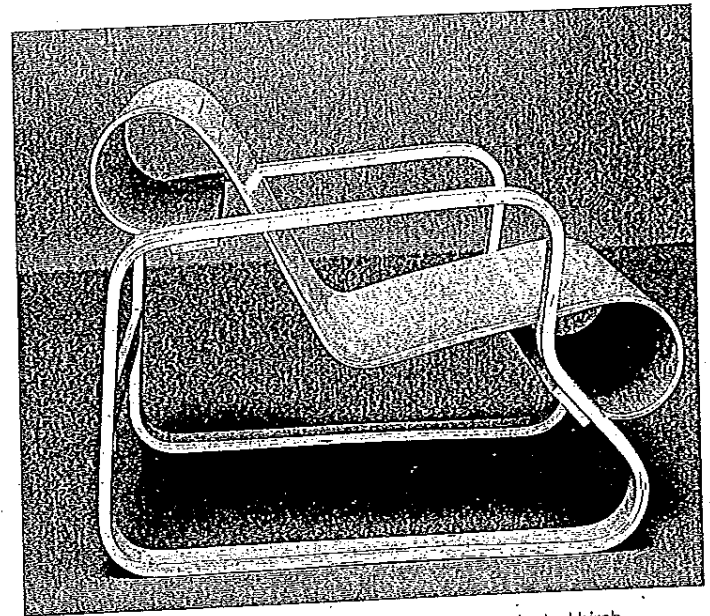
1. What is needed?
2. What existing designs are similar to the design we need?
3. What is the difference between the existing designs and the new design?
4. How can we transform, combine, or expand these existing designs?

By studying the classic Eames chair, we can see this process clearly. Charles and Ray Eames were two of the most innovative and influential designers of the postwar era. Trained as an architect, Charles was a master of engineering and had a gift for design integration. Trained as a painter, Ray contributed a love of visual structure, a sense of adventure, and an understanding of marketing. Combining their strengths, this husband-and-wife team designed furniture, toys, exhibitions, and architecture and directed over 80 experimental films.

Their first breakthrough in furniture design came in 1940, when they entered a chair competition sponsored by the Museum of Modern Art. Many architects had designed furniture, and the Eameses were eager to explore this field. Many similar products existed. The most common was the overstuffed chair, which continues to dominate American living rooms. Extensive padding on a boxy framework supported the sitter. Another popular design



5.1 Marcel Breuer, *Armchair*, 1925. Tubular steel, canvas, 28 $\frac{1}{8}$ in. h. \times 30 $\frac{3}{8}$ in. w. \times 26 $\frac{1}{4}$ in. d. (72.8 \times 77 \times 68 cm).

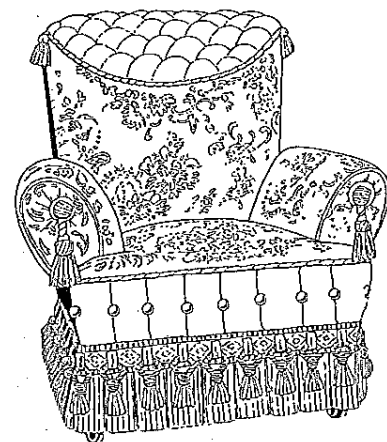


5.2 Alvar Aalto, *Paimio Lounge Chair*, 1931–33. Laminated birch, molded plywood, lacquered, 26 \times 23 $\frac{3}{4}$ \times 34 $\frac{1}{4}$ in. (66 \times 60.5 \times 88.5 cm).

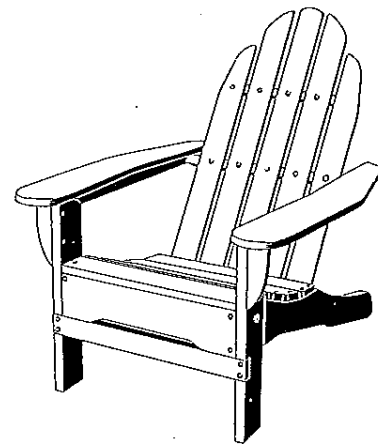
was the Adirondack chair, made from a series of flat wooden planks. Of greatest interest, however, were designs by architects such as Marcel Breuer (5.1) and Alvar Aalto (5.2). These designs used modern materials and clearly displayed their structure.

By comparing existing chairs with the chair they wanted, Charles and Ray could identify qualities they needed to retain and qualities that needed to be changed. The familiar overstuffed chair (5.3) was bulky and awkward, but it was comfortable. The Adirondack chair (5.4) was easy to mass-produce, but too large for interior use. The modern chairs were elegant and inventive but were expensive to produce and often uncomfortable. The Eameses wanted to create a modern chair that was comfortable, elegant, and inexpensive.

During World War II, the Eames team had designed and manufactured molded plywood splints, which were used by doctors in the U.S. Navy. After extensive research and experimentation, they had mastered the process of steaming and reshaping the sheets of plywood into complex curves. In developing their competition entry, they combined their knowledge of splints, love of modern chairs, understanding of painting, and mastery of architecture. Their plywood chair, designed in collaboration with architect Eero Saarinen, was awarded the first prize.



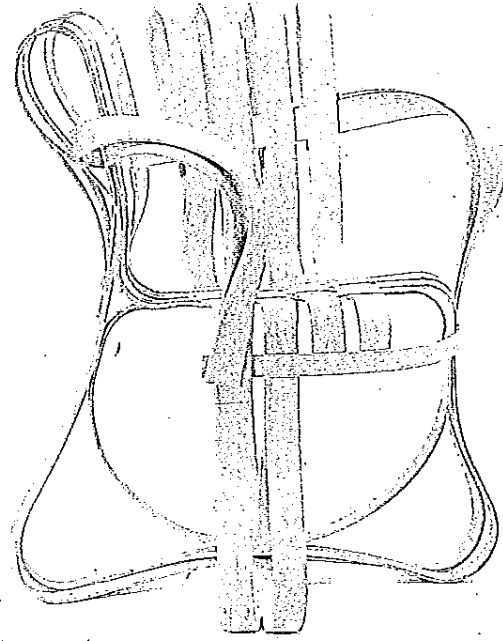
5.3 Overstuffed Chair



5.4 Adirondack Chair



5.5 Charles and Ray Eames, *Side Chair, Model DCM*, 1946. Molded ash plywood, steel rod, and rubber shockmounts, 28½ in. h. × 19½ in. d. × 20 in. w. (73 × 49.5 × 50.8 cm).



5.6 Frank Gehry, *Cross Check Armchair*, 1992. Maple, 33½ in. h. × 28½ in. d. × 28½ in. w. (85.3 × 72.4 × 72.4 cm).

A series of Eames designs followed, including a metal and plywood version in 1946 (5.5) and several cast plastic versions. One popular chair was mass-produced by the thousands.

By addressing a need, visualizing existing designs, making comparisons, and combining the best characteristics of existing chairs, the Eames team produced a new kind of chair and thus firmly established themselves as leaders in the design field.

The Fine Art Process

For a designer, the problem-solving process begins when a client requests help or the designer identifies a specific need. With the Eames chair, the museum competition provided the impetus for an experiment that reshaped an industry. Design is generally utilitarian, and the problem is usually determined by a client.

Contemporary sculptors, printmakers, filmmakers, and other fine artists generally invent their own aesthetic problems. Ideas often arise from personal experience and from the cultural context. Combining self-awareness with empathy for others,

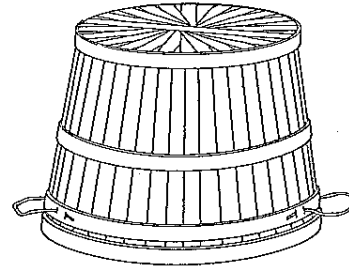
many artists have transformed a specific event into a universal statement. For example, Picasso's *Guernica* (see figure 7.20, page 173) painted in response to the 1937 bombing of a specific Spanish village, is now revered as a universal statement about the horrors of war. Working more independently and with fewer deadlines, artists can explore ideas and issues of personal interest.

Sources of Ideas

Regardless of the initial motivation for their work, both artists and designers constantly scan their surroundings in an omnivorous search for images and ideas. As demonstrated by the profiles that appear throughout this book, the most improbable object or idea may provide inspiration. Memories of growing up in small-town America provide the stimulus for *Storefront Stories*, by Nancy Callahan and Diane Gallo. Biological systems inspire sculptor Heidi Lasher-Oakes. Ordinary vegetables and African vessels influence ceramicist David MacDonald. If you are at a loss for an idea, take a fresh look at your surroundings.

Transform a Common Object

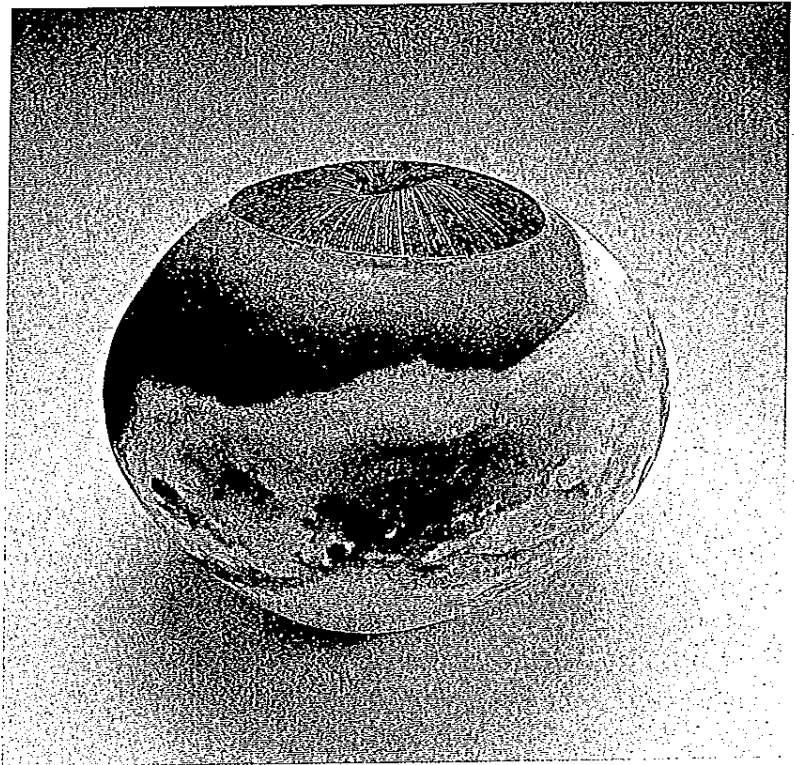
Architect Frank Gehry based the exuberant armchair in figure 5.6 on the wood-strip bushel basket used by farmers (5.7). If you consider all the ideas that can be generated by a set of car keys, a pair of scissors, a baseball glove, or a compass, you will have more than enough to get a project started.



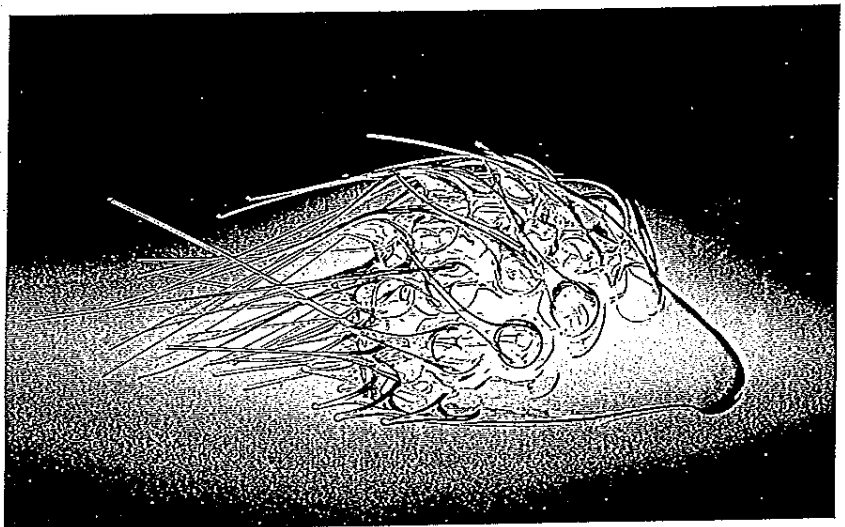
5.7 A Wood-Strip Bushel Basket

Study Nature

Ceramicist Ray Rogers is inspired by many natural forms, including mushrooms, stones, and aquatic life. His spherical pots (5.8) often suggest the colors, textures, and economy of nature. In figure 5.9, Vera Lisková used the fluidity and transparency of glass to create a humorous version of a porcupine. Through an inventive use of materials, both artists have reinterpreted nature.



5.8 Ray Rogers, *Vessel*, New Zealand, 1984. Large, pit-fired (porous and nonfunctional) with "fungoid" decorative treatment in relief. Diameter approximately 21½ in. (55 cm).



5.9 Vera Lisková, *Porcupine*, 1972–80. Flame-worked glass, 4¼ × 11 in. (10.8 × 28.2 cm).

Visit a Museum

Artists and designers frequently visit all kinds of museums. Carefully observed, the history and physical objects produced by any culture can be both instructive and inspirational. Looking at non-Western artwork is especially valuable. Unfamiliar concepts and compositions can suggest new ideas and fresh approaches. Beau Dick's *Mugamtl Mask* (5.10) is one example. First developed by a man who had revived from a deadly illness, it depicts the supernatural abilities (including flight) that he gained during his experience. His descendants now have the right to construct and wear this special mask. By understanding the story and studying the mask structure, you can more readily design a mask based on your own experiences.

Characteristics of a Good Problem

Regardless of its source, the problem at hand must fully engage either the artist or the designer. By courageously confronting obstacles and seeking solutions, the artist or designer can develop increasingly ambitious work. Whether it is assigned or invented, a good problem includes many of the following characteristics.

Significant

When substantial amounts of time, effort, and money are being spent, it is wise to prioritize problems and focus on those of greatest consequence. Identifying and prioritizing your major goals can help you determine the significance of a job. Balancing this analysis with a sense of adventure can help you combine the best qualities of a risk-taker and a safe-keeper.

Socially Responsible

With the human population above 6 billion, it is unwise to pursue a project that squanders natural resources. In the past 20 years, designers have become increasingly aware of the environmental and social consequences of their actions. What natural resources will be required for a major project, and how will you dispose of resulting waste? Increasingly, designers consider the environmental as well as the economic implications of each project.



5.10 Beau Dick, *Mugamtl Mask (Crooked Beak)*, 1993. Red cedar, cedar bark, paint, 24 × 26 × 16 in. (61 × 66 × 40.8 cm).

Comprehensible

It is almost impossible to solve a problem you don't understand. When working on a class assignment, ask questions if the assignment is unclear to you.

Open to Experimentation

It is important to distinguish between clear definition and restrictive limitations. Consider the following two assignment descriptions:

1. Organize at least 20 photocopies in such a way that they convey an idea or emotion.
2. Organize 20 photographs by American Civil War photographer Mathew Brady in order to tell a story about the life of Abraham Lincoln.

In the first case, the requirements of the project are clearly stated, but the solution remains open to invention. In the second case, the *solution* as well as the *problem* is described. For the inventive artist or designer, there are no "bad" problems, only bad solutions. Nonetheless, when limited to a narrow range of possible solutions, even the most inventive person will become ineffective. If you find yourself in a straitjacket, rethink the problem and try a new approach.

Ambitious yet Achievable

When the problem is too easy or the solution is too familiar, little is learned and nothing is gained. When the problem is too difficult or the solution is too time-consuming, completion is delayed and costs increase. Continued indefinitely, even the most exciting project can become a trap!

Authentic

Regardless of the source, every person approaches each problem on his or her own terms. Each of us has a unique perspective, and the connections, which are so important in design, will vary. Likewise, as a student, you will learn more when you really embrace each assignment and make it your own. Ask questions, so that you can understand the substance as well as the surface of each assignment. When you reframe the assignment in your own terms and plunge into the work wholeheartedly, the creative possibilities will expand and your imagination will soar.

CONVERGENT AND DIVERGENT THINKING

To see how it all works, let's work our way through an actual assignment, using two different problem-solving strategies.

Problem: Organize up to 20 photocopies from the library so that they tell a story. Use any size and type of format as appropriate. Any image can be enlarged, reduced, cropped, or repeated.

Using Convergent Thinking

Convergent thinking involves the pursuit of a predetermined goal, usually in a linear progression and using a highly focused problem-solving technique. The word *prose* can help you remember the basic steps:

1. Define the *problem*.
2. Do *research*.
3. Determine your *objective*.
4. Devise a *strategy*.
5. *Execute* the strategy.
6. *Evaluate* the results.

In convergent thinking, the end determines the means. You know what you are seeking before you begin. For this reason, clear definition of the problem is essential: the most brilliant idea is useless if it doesn't solve the problem.

Convergent thinking is familiar to most of us through the scientific method, which follows the same basic procedure. It is orderly, logical, and empirical; there are clear boundaries and specific guidelines. Clearly focused on the final result, convergent thinking is a good way to achieve a goal and meet a deadline. Let's analyze each step.

Define the Problem

Determine the exact parameters of the assignment. Ask lots of questions, so that you understand the assignment objectives. Determine all of the physical and technical requirements and ask whether there are any stylistic limitations. Be sure that you understand the preliminary steps as well as the final due date.

Next, assess your strengths and weaknesses relative to the problem assigned, and determine your best work strategy. Let's consider the approaches taken by two hypothetical students, Jeremy (as a convergent thinker) and Angela (as a divergent thinker).

Jeremy begins by defining *story*, *images*, and *library*. From the dictionary, he finds that a *story* is shorter than a novel, that it may be true or fictitious, that a series of connected events is needed, and that it may take many forms, including a memoir, a play, or a newspaper article.

Next, he finds that an *image* is a representation of a person or thing, a visual impression produced by reflection in a mirror, or a mental picture of something: an idea or impression. This means that photographs from books or magazines and reproductions of paintings are fair game. Jeremy realizes that he can even include a mirror in the project, to reflect the viewer's own image.

Finally, by exploring the computer system in the *library*, he finds that Internet resources as well as books are available. He spends the first hour of class on brainstorming, then decides to develop a story about Irish immigration to America at the turn of the century.

Do Research

Creativity is highly dependent on seeking connections and making new combinations. The more information you have, the more connections you can make. Through research, you can collect and assess technical, visual, and conceptual information. For this assignment, Jeremy develops a plausible story based on immigrant diaries. He begins to collect images of ships, cities, and people.

Determine Your Objective

Jeremy now has the raw material needed to solve the problem. However, many questions remain unanswered, including

- What happens in this story? Is it fiction or nonfiction?
- Who is the storyteller? A 12-year-old boy will tell a very different story than a 20-year-old woman.
- What is the best format to use? A dozen letters, sent between fictitious brothers in Dublin and

Boston? A Website, describing actual families? A photo album?

At this point, Jeremy pauses to determine his objective, both as an artist and as a student. What does he really want to communicate? He considers:

- *Does it solve the problem?* He reviews the assignment parameters.
- *Is the solution conceptually inventive?* Is it really intriguing, or is it something we've all seen before, a cliché?
- *Is the planned solution visually compelling?*
- *Can this solution be completed by the due date?* To meet the due date, it may be necessary to distill a complex problem down to an essential statement. In this case, Jeremy decides to simplify his project by focusing on one main character.

Devise a Strategy

While some assignments can be done in an afternoon, three-dimensional projects and multiple-image works tend to take longer. Jeremy determines the supplies he needs and considers the best time and place to work on the project.

Execute the Strategy

Now, Jeremy just digs in and works. He has found it best to work with great concentration and determination at this point, rather than second-guessing himself.

Evaluate the Results

At the end of each work session, Jeremy considers the strengths and weaknesses of the work in progress. What areas in each composition seem timid or confusing? How can those areas be strengthened? He finally presents the project for a class critique.

Convergent Thinking Applications

Convergent thinking is most effective when

- The problem can be defined clearly.
- The problem can be solved rationally.

- The problem must be solved sequentially.
- Firm deadlines must be met.

Because many problems in science and industry fit these criteria, convergent thinking is widely used by scientists, businesspeople, and graphic designers.

Using Divergent Thinking

The advantages of convergent thinking are clarity, control, focus, and a strong sense of direction. For many tasks, convergent thinking is ideal. In some cases, however, convergent thinking can offer *too* much clarity and not enough chaos. Inspiration is elusive. Over-the-edge creativity is often messy and rarely occurs in an orderly progression. If you want to find something completely new, you will have to leave the beaten path.

In divergent thinking, the means determines the end. The process is more open-ended; specific results are hard to predict. Divergent thinking is a great way to generate ideas and move beyond preconceptions.

There are two major differences between convergent and divergent thinking. First, in divergent thinking, the problem is defined much more broadly, with less attention to "what the client wants." Research is more expansive and less tightly focused. Experimentation is open-ended: anything can happen. Second, because the convergent thinker discards weak ideas in the thumbnail stage, the final image is preplanned and predictable. The divergent thinker, on the other hand, generates many variables, is less methodical, and may have to produce multiple drafts of a composition in order to get the desired result.

While convergent thinking is usually more efficient, divergent thinking is often more inventive. It opens up unfamiliar lines of inquiry and can lead to a creative breakthrough. Divergent thinking is a high-risk/high-gain approach. By breaking traditional rules, the artist can explore unexpected connections and create new possibilities.

Let's try the same assignment again, now using Angela's divergent thinking.

Problem: Organize up to 20 photocopies from the library so that they tell a story. Use any size and type of format as appropriate. Any image can be enlarged, reduced, cropped, or repeated.

Realizing that the strength of the source images is critical, Angela immediately heads for the section of the library devoted to photography. By leafing through a dozen books, she finds 30 great photographs, ranging from images of train stations to trapeze artists. She photocopies the photographs, enlarging and reducing pictures to provide more options. Laying them out on a table, she begins to move the images around, considering the stories that might be generated. Twenty of the images are soon discarded; they are unrelated to the circus story she begins to develop. She then finds 5 more images to flesh out her idea.

At this point, her process becomes similar to the final steps described in the preceding section. Like Jeremy, she must clarify her objective, develop characters, decide on a format, and construct the final piece. However, because she started with such a disparate collection of images, her final story is more likely to be nonlinear. Like a dream, her images may suggest ideas rather than describe specific situations.

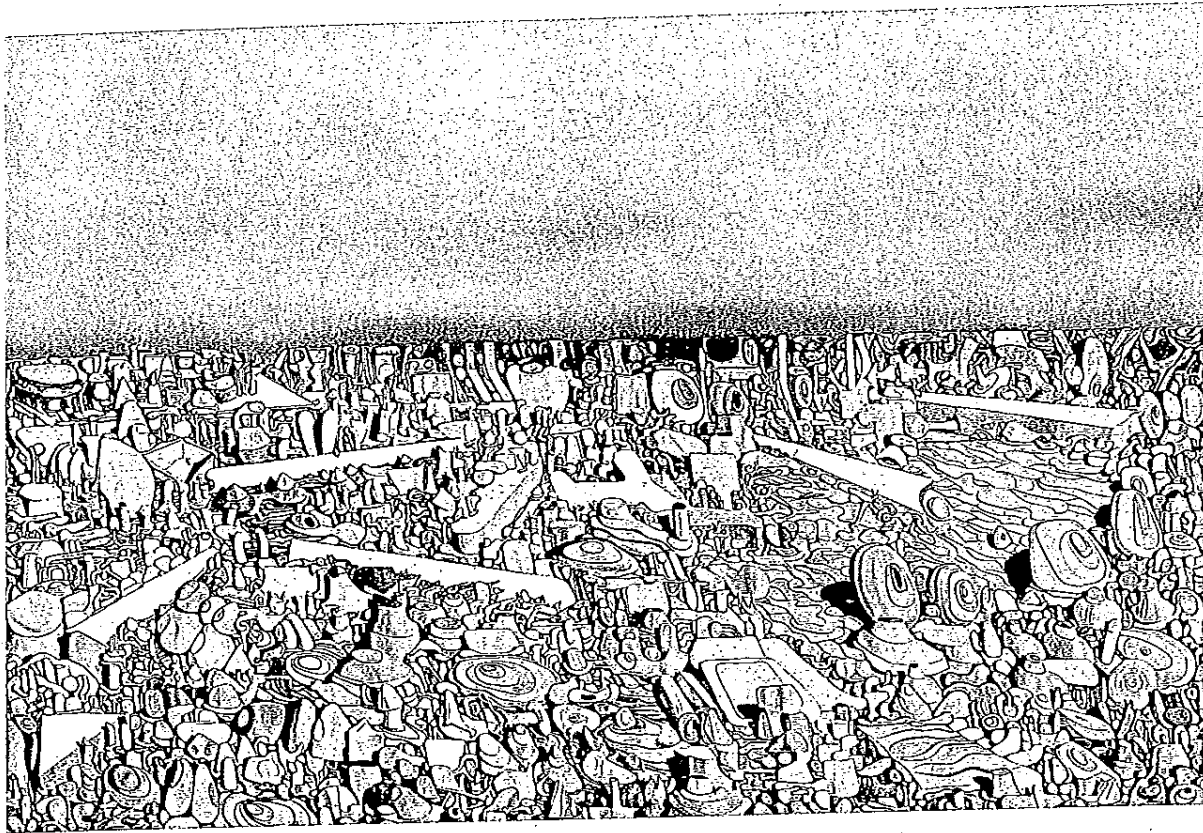
Divergent Thinking Applications

Divergent thinking is most effective when

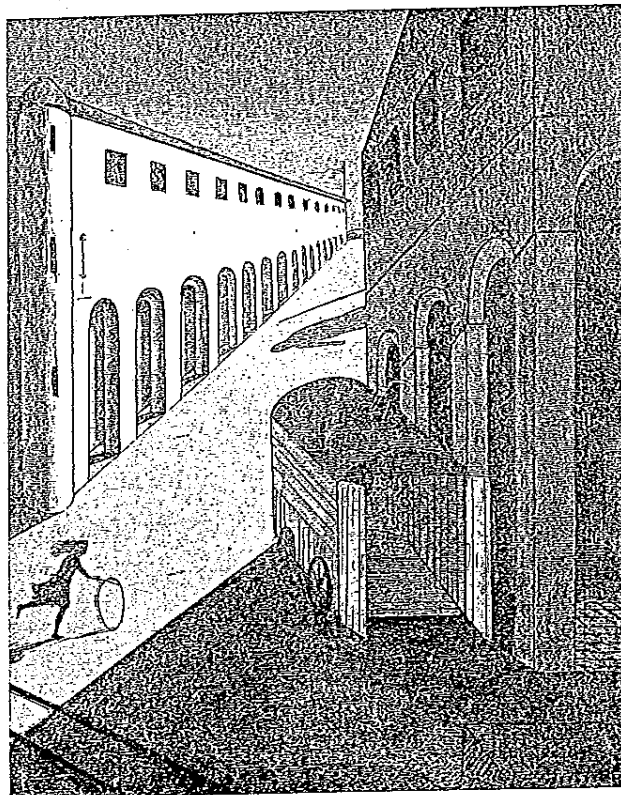
- The problem definition is elusive or evolving.
- A rational solution is not required.
- A sequential work method is unnecessary.
- Deadlines are flexible.

Many creative people have used divergent thinking to explore the subconscious and reveal unexpected new patterns of thought. Surrealism, an art movement that flourished in Europe between the world wars, provides many notable examples of divergent thinking in art and literature. More interested in the essential substance of ideas and objects than in surface appearances, painter Yves Tanguy constructed *Multiplication of the Arcs* (5.11) from evocative abstract shapes. In *The Mystery and Melancholy of a Street* (5.12), Giorgio de Chirico used distorted perspective, relentless repetition, and threatening cast shadows to create a feeling of anxiety. More interested in stimulating the viewer's own response than in imposing a specific vision, the surrealists rejected rational thought.

Which is better—convergent or divergent thinking? A good problem-solving strategy is one



5.11 Yves Tanguy, *Multiplication of the Arcs*, 1954. Oil on canvas, 40 × 60 in. (101.6 × 152.4 cm).



5.12 Giorgio de Chirico, *The Mystery and Melancholy of a Street*, 1914. Oil on canvas, 24¼ × 28½ in. (62 × 72 cm).

that works. If five people are working on a Website design, a clear sense of direction, agreement on style, an understanding of individual responsibilities, and adherence to deadlines are essential. Such a design team will usually use convergent thinking. On the other hand, when an artist is working independently, the open-ended divergent approach can lead to a major breakthrough. By understanding both approaches, you can select the work method that is best for you.

BRAINSTORMING

Brainstorming plays an important role in both convergent and divergent thinking. It is a great way to expand ideas, see connections, and explore implications. The following are four common strategies.

Make a List

Let's say that the assignment involves visualizing an emotion. Start by listing every emotion you can,

regardless of your interest in any specific area. Getting into the practice of opening up and actively exploring possibilities is crucial: just pour out ideas!

joy sorrow anger passion jealousy
 sympathy horror exaltation

From the list of emotions, circle one that looks promising. To move from the intangible name of the emotion to a visual solution, develop a list of the kinds, causes, and effects of the emotion. Following is one example, using *anger* as a starting point.

KINDS	CAUSES	EFFECTS
annoyance	wrong-number phone call at 5 A.M.	slammed down phone
smoldering rage	friend gets award you want	argument with friend
desperate anger	fired from job	shouted at your child
anger at self	poor performance on test	major studying

By investigating specific kinds of anger and determining the causes and the effects, you now have some specific images to develop, rather than struggling with a vague, intangible emotion.

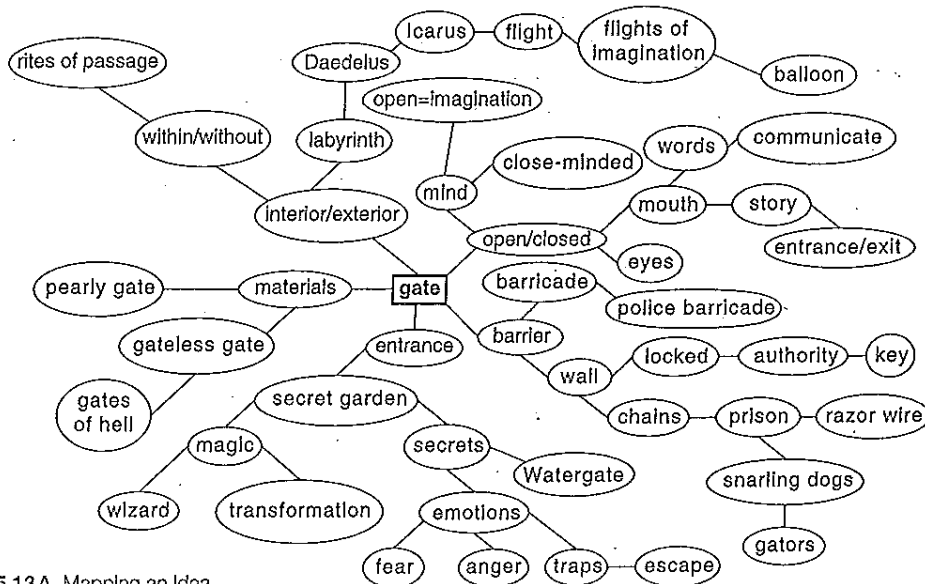
Use a Thesaurus

Another way to explore the potential of an idea is to use a thesaurus. Be sure to get a thesaurus that lists words conceptually rather than alphabetically. Use the index in the back to look up the specific word you need. For example, *The Concise Roget's International Thesaurus* has a section titled "Feelings," including everything from *acrimony* to *zeal*. Here is a listing of synonyms from the section on resentment and anger: *anger, wrath, ire, indignation, heat, more heat than light, dudgeon, fit of anger, tantrum, outburst, explosion, storm, scene, passion, fury, burn, vehemence, violence, vent one's anger, seethe, simmer, and sizzle!* Thinking about a wide range of implications and connections to other emotions can give you a new approach to a familiar word.

Explore Connections

By drawing a conceptual diagram, you can create your own thesaurus. Start with a central word. Then, branch out in all directions, pursuing connections and word associations as widely as possible. In a sense, this approach lets you visualize your thinking, as the branches show the patterns and connections that occurred as you explored the idea (5.13A).

In *Structure of the Visual Book*, Keith Smith demonstrates the value of verbal connections. Smith seeks immersion in his subject. He wants to know it



5.13A Mapping an Idea.

If I am going to make drawings or photographs which include a bicycle, I might go for a bike ride, but more importantly I would fantasize about a bike. I would picture a bike in my mind. The most obvious depiction is the side view because this is the significant profile. I would then imagine a standing bicycle with no rider, looking from above, directly down on the bike, or from behind or in front of the standing bike with my eye-level midway between the ground and the handlebars. In these three positions the bicycle is seen from the least significant profile. It is a thin vertical line with horizontal protrusions of the pedals, seat and handlebars. The area viewed is so minimal that the bicycle almost disappears.

Before long in examining a bike I would become involved with circles. Looking at the tires, I think about the suspension of the rim and the tire, indeed, the entire vehicle and rider, by the thin spokes. It amazes me that everything is floating in space, connected only by thin lines. I imagine riding the bike through puddles and the trace of the linear journey from the congruent and diverging water marks left by the tread on the pavement. I might think about two friends together and separated. Symbolism.

I think about cycles of being with friends and apart. And again I would think literally of cycles, circles and tires.

I would think of the full moon as a circle and how in its cycle it turns into a line. I would see the tires from the significant profile and in my mind I would turn it in space and it would become an ellipse.

If I turned it further, until it was on an axis 90 degrees from the significant profile, it would no longer be a circle or an ellipse, but it would be a line. So again, line comes into my thoughts.

A circle is a line.

A circle is a straight line.¹

5.13B

so well that, when he begins to work, he can pursue his images intuitively, with all the power and grace of a skillful cyclist. Try to follow the steps in figure 5.13B, as he explores the word *bicycle*.

Keep a Journal

Keeping a journal or sketchbook is an ideal way to record your ideas and create connections. In it, you can

- Classify, arrange, and record information.
- Brainstorm new ideas.
- Examine your current beliefs and analyze the beliefs of others.

- Record your responses to critiques.
- Make connections among your various classes.

Recording your ideas at the end of each class and reviewing them at the beginning of the next can help you construct your own learning process. Anything that expands your thinking is fair game, including

- Plans for projects, such as thumbnail sketches and rough drafts
- Comments on how your work can be improved
- Notes from textbook readings and clippings from magazines

5.14 Examples of Thumbnail Sketches



- Notes on visiting artists or gallery visits
- Technical notes or information on materials used in class
- Questions you want to pose in the next class meeting

Your record keeping can take many forms, including

- Drawings and diagrams
- Written ideas, descriptions, and lists
- Poetry or other excerpts from literature and song lyrics

Ask yourself the following questions:

- What was the most compelling image I saw today? What made it compelling?
- What was the most memorable or most offensive idea I heard expressed today? Why was it memorable or offensive?
- What similarities and differences were there among my studio classes this week?
- What connections were there between my lecture classes and studios?
- What do I know today that I didn't know yesterday?
- What do I need to know in order to push my ideas further?

Viewing the journal as a record of your creative process is liberating. Just let your ideas flow. A random idea today can help you solve a visual problem tomorrow. Indeed, it is wise to review the journal as

you move into upper-level classes. Many ideas that were too ambitious for a first-year class are perfectly suited to further development in an upper-level class.

VISUAL RESEARCH

Thumbnail Sketches

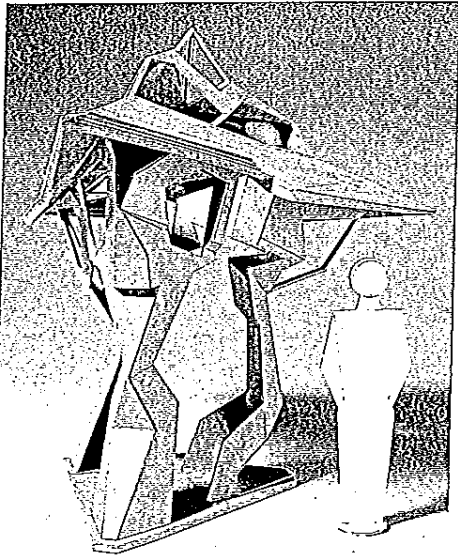
Library research played a major role in Angela's divergent thinking as well as Jeremy's convergent thinking. We will now consider various approaches to visual research.

Return to your original list of emotions you developed in the brainstorming exercise. Circle the most promising words or phrases you have generated and look for connections between them. Start working on thumbnail sketches, about 1.5 × 2 in. in size (5.14). Be sure to draw a clear boundary for the sketches. The edge of the frame is like an electric fence; by using the edge wisely, you can generate a lot of power!

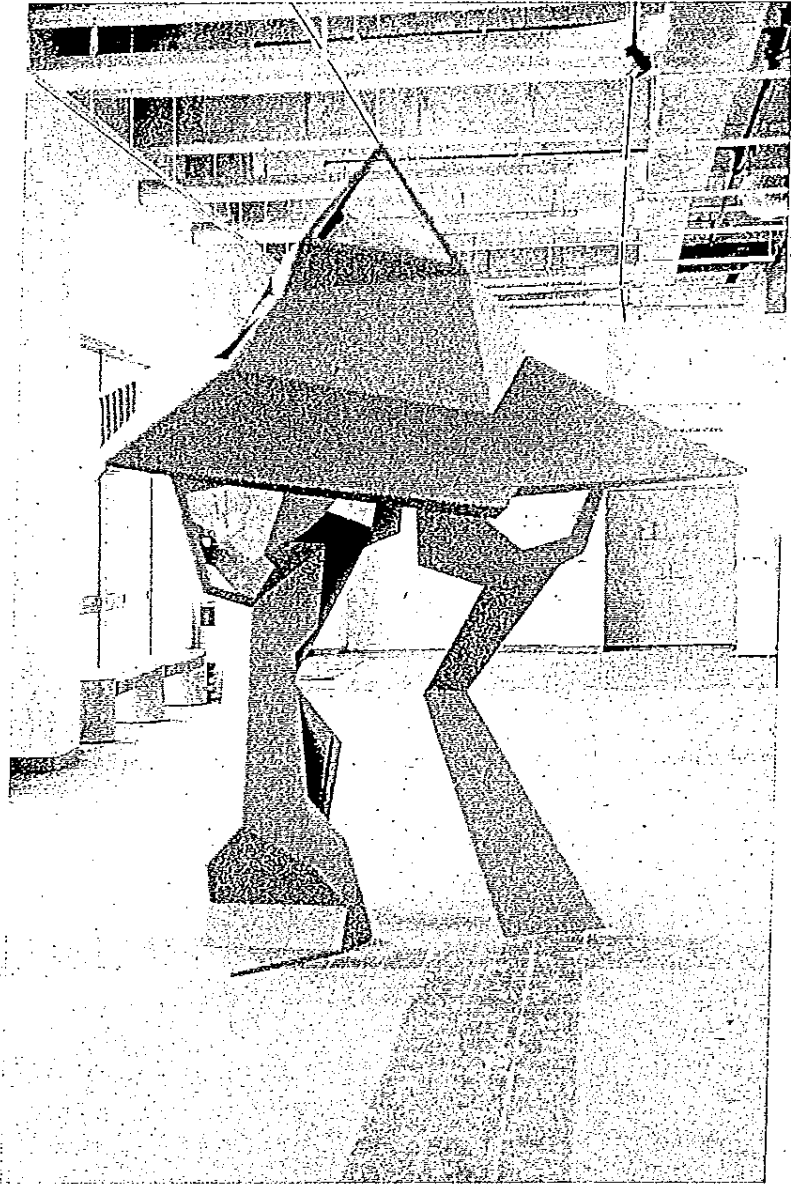
As with the verbal brainstorming, move fast and stay loose at this point. It is better to generate 10 to 20 possibilities than to refine any single idea. You may find yourself producing very different solutions, or you may make a series of multiple solutions to the same idea: either approach is fine. Just keep moving. An open, nonjudgmental attitude is essential.

Model Making

When working two-dimensionally, it is often necessary to make one or more full-sized rough drafts to



5.15A Peter Forbes, Models for *Shelter/Surveillance Sculpture*, 1994. Mixed media, 10½ × 9¼ × 9 in. (27 × 24 × 23 cm).



5.15B Peter Forbes, *Shelter/Surveillance Sculpture*, 1994. Mixed media, 11 ft 2 in. × 10 ft 4 in. × 10 ft (3.4 × 3.2 × 3 m).

see how the design looks when enlarged. Refinements made at this stage can make the difference between an adequate solution and an inspired solution.

Prototypes, models, and maquettes serve a similar purpose when you are working three-dimensionally. A maquette is a well-developed three-dimensional sketch. Figure 5.15A shows Peter Forbes' maquette for *Shelter/Surveillance Sculpture*. In this chipboard "sketch," Forbes determined the size of the sculpture relative to the viewer and developed a construction strategy. As a result, when he constructed the final, 11-foot-tall sculpture, Forbes was able to proceed with confidence. A model is a technical experiment. A prototype can be

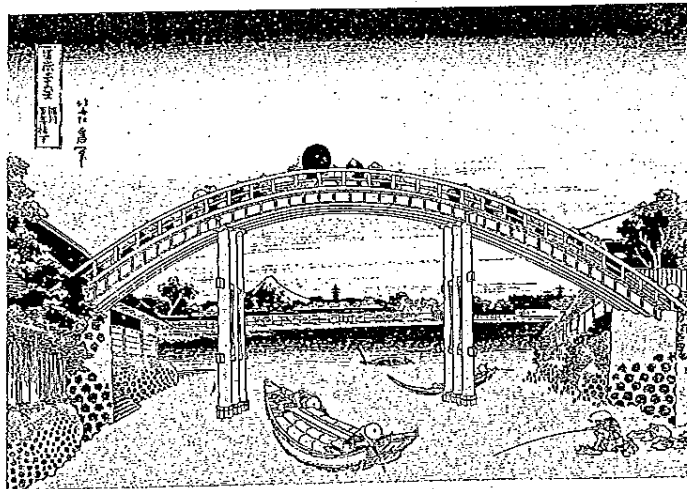
quite refined, as with the fully functional test cars developed by automobile companies. In addition to the aesthetic benefit of these preliminary studies, it is often necessary to solve technical problems at this stage. Is the cardboard you are using heavy enough to stand vertically, or does it bow? Is your adhesive strong enough? If there are moving parts, is the action fluid and easy, or does the mechanism consistently get stuck?

By completing these preliminary studies, you can refine the idea, strengthen the composition, and improve the craft of the final piece. As with a well-rehearsed performance, the work you bring to the critique is now really ready for discussion.

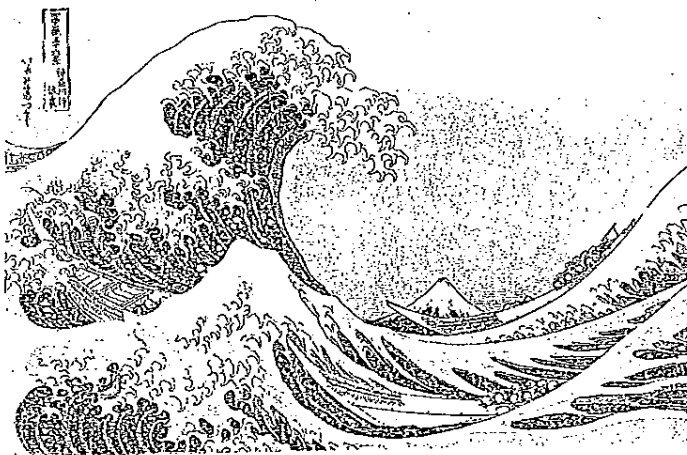
VARIATIONS ON A THEME

When we work creatively, the idea develops right along with the image. As the project evolves, we see other implications that go beyond our initial intention. By courageously pursuing these implications, we can exceed our original expectations. Just as the landscape appears to expand when we climb a mountain, so an image can expand when our conceptual understanding increases.

One way to get a lot of mileage out of an idea is through variations on a theme. Professional artists rarely do just one painting or sculpture of a given idea — most do many variations before moving to a new subject. *Thirty-Six Views of Mount Fuji* is one example. Printmaker Katsushika Hokusai was 70 years old when he began this series. The revered and beautiful Mount Fuji appeared in each of the designs in some way. Variations in the time of year and size of the mountain helped Hokusai produce very different images while retaining the same basic theme (5.16A–C).



5.16A Katsushika Hokusai, *Thirty-Six Views of Mount Fuji: Under the Mannen Bridge at Fukagawa*, Edo Period, c. 1830. Color woodblock print, 10 $\frac{1}{8}$ × 14 $\frac{1}{8}$ in. (25.7 × 37.5 cm).



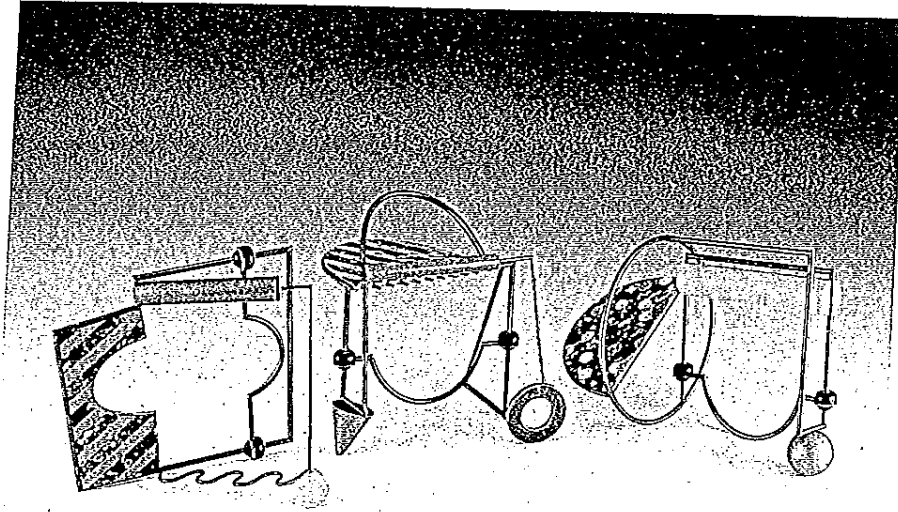
5.16B Katsushika Hokusai, *Thirty-Six Views of Mount Fuji: The Great Wave off Kanagawa*, Edo Period, c. 1830. Color woodblock print, 10 $\frac{1}{8}$ × 14 $\frac{1}{8}$ in. (25.9 × 37.5 cm).



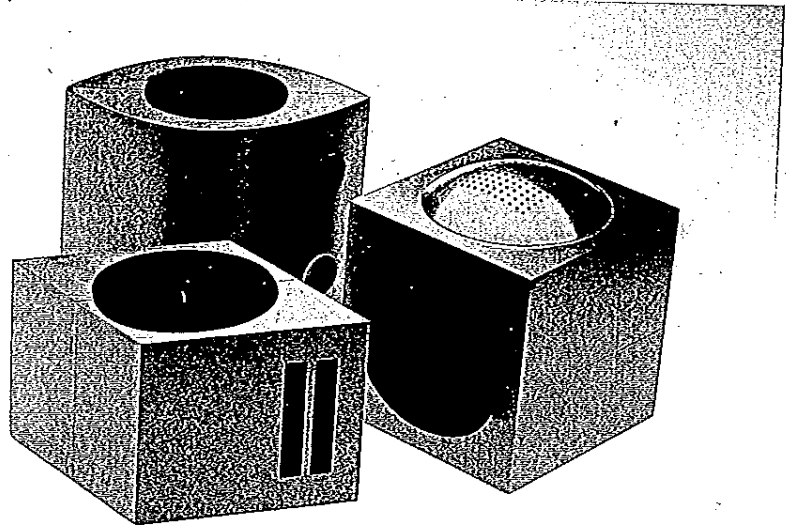
5.16C Katsushika Hokusai, *Thirty-Six Views of Mount Fuji: Near Umezawa in Sagami Province*, Edo Period, c. 1830. Color woodblock print, 10 $\frac{1}{8}$ × 14 $\frac{1}{8}$ in. (25.6 × 37.8 cm).

A very different series of variations is presented in figures 5.17 and 5.18. Here, the two artists offer very individual interpretations of the basic bracelet. Leslie Leupp's three bracelets present a playful dialogue between form and space. Lines, planes, and

simple volumes dance around the wearer's wrist. In contrast, Lisa Gralnick's three bracelets are dark, massive, and threatening. The crisp angles, simple forms, and black acrylic are more suggestive of armor than of jewelry.



5.17 Leslie Leupp, *Three Bracelets: Solidified Reality, Frivolous Vitality, Compound Simplicity*, 1984. Steel, plastic, linoleum, laminate, aluminum. Constructed, each 3 × 4 × 3 in. (8 × 10 × 8 cm).



5.18 Lisa Gralnick, *Three Bracelets*, 1988. Black acrylic, gold, hollow construction, left to right: 3 × 3½ × 3½ in.; 4½ × 3½ × 3 in.; 3½ × 3½ × 3½ in. (7.6 × 8.9 × 8.9 cm; 11.4 × 8.9 × 7.6 cm; 8.9 × 8.9 × 8.9 cm).

AN OPEN MIND

As noted in Chapter Four, most creative people have a wide range of interests. The very best artists and designers are often accomplished in more than one field. For example, Michelangelo was acclaimed as a painter, sculptor, and poet, while da Vinci was a master of art, biology, and engineering. The study of philosophy has had a major impact on videographer Bill Viola and on installation artist Robert Irwin. Performer Laurie Anderson is equally an artist and a musician and derives many of her ideas from literature. Whenever the base of knowledge expands, the range of potential connections

increases. When the islands of knowledge are widely scattered, as with interdisciplinary work, the imaginative leap is especially great.

The message is clear. The more you know, the more you can say. Read a book. Attend a lecture. Take a course in astronomy, archaeology, psychology, or poetry. Use ideas from academic courses to expand your studio work. Art and design require conceptual development as well as perceptual and technical skill. By engaging your heart, your eye, your hand, and your mind, you can fully use your emotional, perceptual, technical, and conceptual resources to create your very best work.

SUMMARY

- Concept and composition are equally important aspects of art and design.
- Designers usually solve problems presented by clients. Artists usually invent aesthetic problems for themselves.
- Ideas come from many sources, including common objects, nature, mythology, and history.
- Good problems are significant, socially responsible, comprehensible, achievable, and authentic. They provide basic parameters without inhibiting exploration.
- Convergent thinking is highly linear. The word *prose* can help you remember the steps.
- Divergent thinking is nonlinear and more open-ended than convergent thinking. It is less predictable and may lead to a creative breakthrough.
- Any idea can be expanded or enriched using brainstorming. Making lists, using a thesaurus, making a conceptual diagram, and creating connections are all common strategies.
- Visual and verbal research can provide the background information needed to create a truly inventive solution.
- Pursuing an idea through variations on a theme can help you realize its full potential.

Keywords

brainstorming
convergent thinking

divergent thinking
maquette

model

prototype

SUMMARY