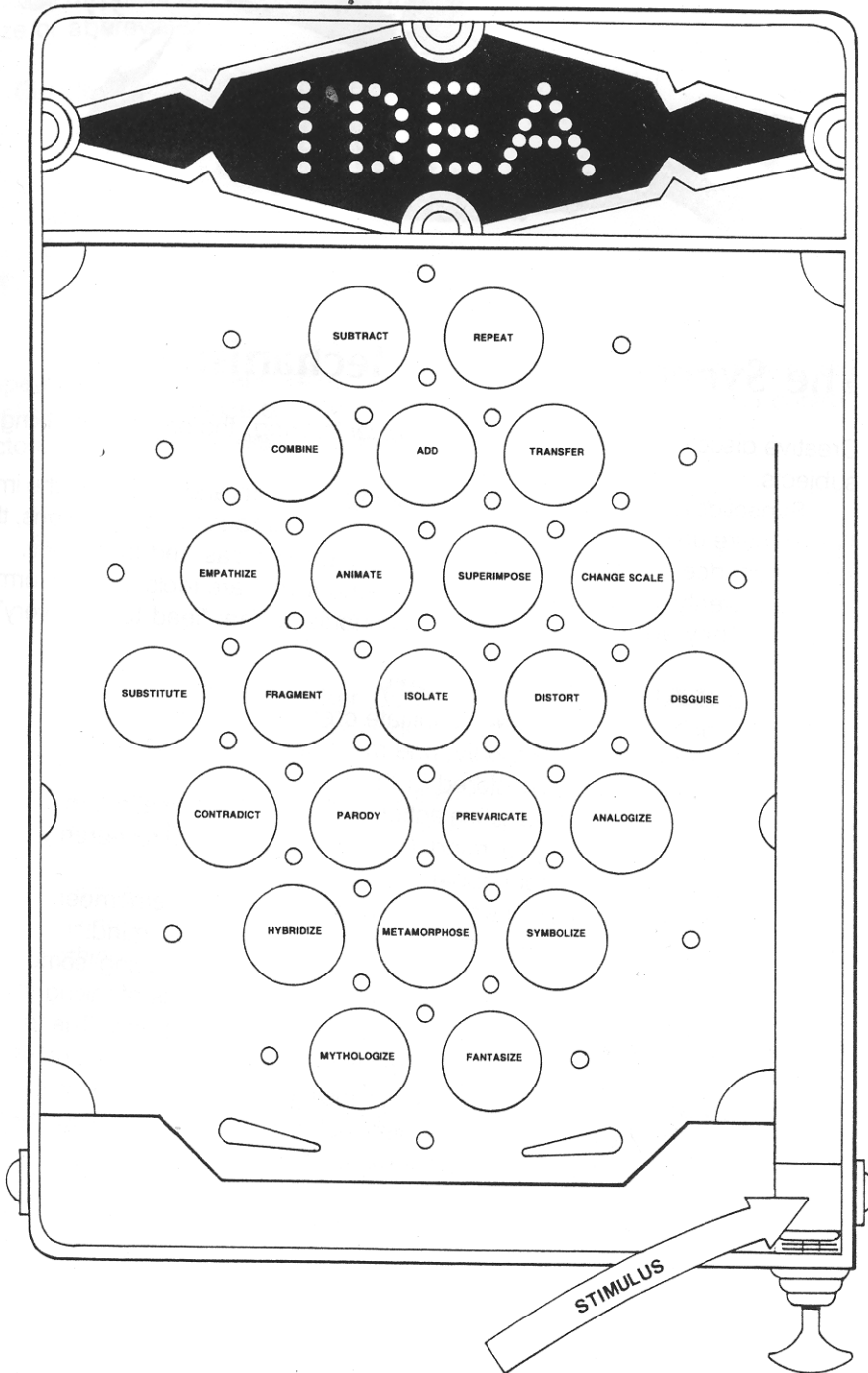


## The Synectic Pinball Machine

Synectic thinking is like a mental pinball game. Stimulus input bounced against the scoring bumpers (The Synectic Trigger Mechanisms) is transformed. Ordinary perceptions are turned into extraordinary ones; the familiar or prosaic is made strange. Synectic play is the creative mind at work.

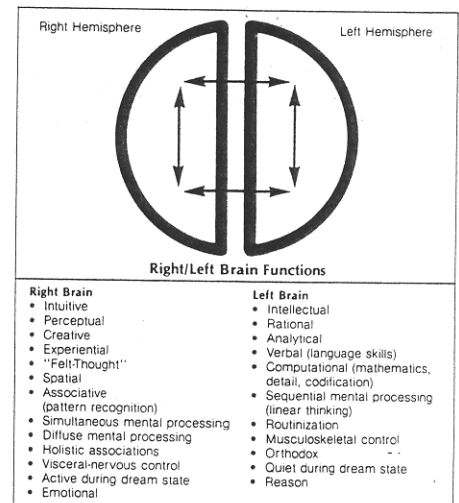
FROM  
DESIGN  
SYNECTICS  
BY NICHOLAS  
ROUVICES  
↳ INTRO TO  
STIMULATING CREATI-  
VITY IN DESIGN



## Making the Brain Go "Click!"

### Playing the Synectic Game

*Creativity in art is nurtured by the co-action of left brain and right brain thinking. Rational intelligence from the left brain is used to "hail down" the dreams and intuitions from the right brain, and turn them into objective perceptions and tangible constructions.*



Stimulus input fed into the Synectic Pinball Machine is transformed into perceptions which emerge as concepts for art and design.



We can revive the spirit of inventiveness by allowing ourselves the freedom to consider the unconventional and probe the possibilities of the impossible.

—John Barell

## The Synectic Trigger Mechanisms

Creative discovery is derived from *analogical thinking*, the process of linking unlike subjects.

Synecetics aids such discovery by jostling the brain and stretching the imagination to make unique comparisons. The more outrageous the associations, the better the chance of bringing to the surface notable ideas and inventions.

The twenty-three "Synectic trigger mechanisms" are tools for transformational thinking. They are heuristic devices (mechanisms that "lead to discovery").

### In Preparation for Discovery

Ideas are not born in a vacuum. To initiate creative thinking, one must first identify the problem or the task. Secondly, one must gather information about it to mix it with the information already stored in the brain.

The first step towards creative action is to gather information, to refer to many sources that will stimulate your mind. Carefully analyze and research your subject. Inform yourself. Have a springboard to work from.

Chance, or luck, also plays a role in discovery. But remember that chance, as Louis Pasteur pointed out, always favors the *prepared* mind.

The artist's conceptual mechanism is activated by "doing something" to a stimulus. Conceptualization, simply defined, is the process of taking information, patterns and ideas and transforming them into something new. The tools for "doing something," according to Roger von Oech, in *A Whack on the Side of the Head* might consist simply of changing contexts, fooling around, and looking at what you are doing from strange angles. It might also include adding something, taking something away, fantasizing, or just plain experimenting.

## The Synectic Trigger Mechanisms: Tools for Creative Thinking

**Subtract.** Simplify. Omit, remove certain parts or elements. Take something away from your subject. Compress it or make it smaller. *Think:* What can be eliminated, reduced, disposed of? What rules can you break? How can you simplify, abstract, stylize or abbreviate?

*Our life is frittered away by detail. . . . Simplify, simplify!*  
—Henry David Thoreau

*Less is more.*  
—Arni Ratic,  
Swiss designer

**Repeat.** Repeat a shape, color, form, image or idea. Reiterate, echo, restate or duplicate your reference subject in some way. *Think:* How can you control the factors of occurrence, repercussion, sequence and progression?

*Every feeling tends to a certain extent to become deeper by repetition.*

—J. Sully

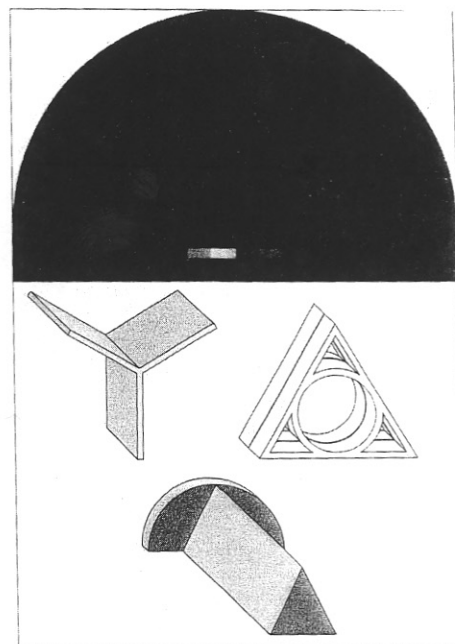
**Combine.** Bring things together. Connect, arrange, link, unify, mix, merge, wed, rearrange. Combine ideas. Combine ideas, materials and techniques. Bring together dissimilar things to produce synergistic integrations. *Ask:* What else can you connect to your subject? What kind of connections can you make from different sensory modes, frames of reference or subject disciplines?

*All art, and most knowledge, entails either seeing connections or making them. Until it is hooked up with what you already know, nothing can ever be learned or assimilated.*

—Ralph Caplan

**Add.** Extend, expand, or otherwise develop your reference subject. Augment it, supplement, advance or annex it. Magnify it: Make it bigger. *Think:* What else can be added to your idea, image, object, or material?

Lucio del Pezzo, **Untitled**, 1978. Serigraph, (27½ × 19½" (70 × 50 cm). Courtesy Studio Marconi, Milan.



**Transfer.** Move your subject into a new situation, environment or context. Adapt, transpose, relocate, dislocate. Adapt the subject to a new and different frame of reference. Move the subject out of its normal environment; transpose it to a different historical, social, geographical or political setting or time. Look at it from a different point of view.

Adapt an engineering principle, design quality, or other special quality of your subject to that of another. (The structure of a bird's wing, for example, has served as a model for designing bridges).

Transfer can also denote *transformation*. *Think:* How can your subject be converted, translated, or transfigured? (See also METAMORPHOSE and HYBRIDIZE.)

**Empathize.** Sympathize. Relate to your subject; put yourself in its "shoes." If the subject is inorganic or inanimate, think of it as having human qualities. How can you relate to it emotionally or subjectively? Offering helpful insight to an art student, the eighteenth century German painter Henry Fuseli once advised, "Transpose yourself into your subject."

*I imagine myself as a rider of a beam of light.*

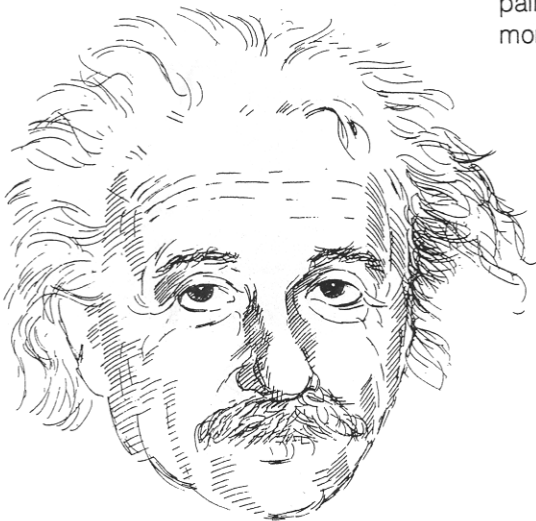
— Albert Einstein

**Animate.** Mobilize visual and psychological tensions in a painting or design. Control the pictorial movements and forces in a picture.

Apply factors of repetition, progression, serialization or narration. Bring life to inanimate subjects by thinking of them as having human qualities.

**Superimpose.** Overlap, place over, cover, overlay: Superimpose dissimilar images or ideas. Overlay elements to produce new images, ideas or meanings. Superimpose different elements from different perspectives, disciplines or time periods on your subject. Combine sensory perceptions (sound/color, etc).

*Think synchronistically:* What elements or images from different frames of reference can be combined in a single view? Notice, for example, how Cubist painters superimposed several views of a single object to show many different moments in time simultaneously.



Albert Einstein.

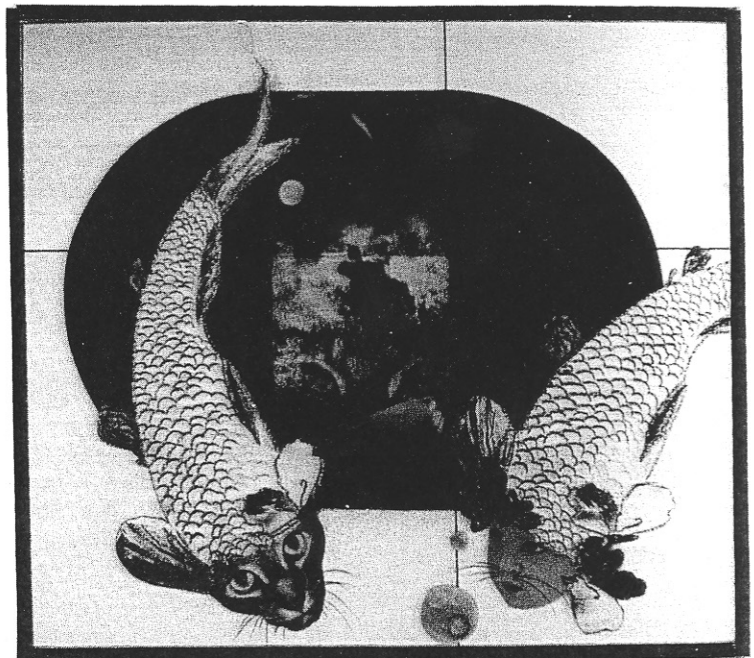
**Change Scale.** Make your subject bigger or smaller. Change proportion, relative size, ratio, dimensions or normal graduated series.

**Substitute.** Exchange, switch or replace: *Think:* What other idea, image, material or ingredient can you substitute for all or part of your subject? What alternate or supplementary plan can be employed?

**Fragment.** Separate, divide, split: Take your subject or idea apart. Dissect it. Chop it up or otherwise disassemble it. What devices can you use to divide it into smaller increments—or to make it appear discontinuous?

**Isolate.** Separate, set apart, crop, detach: Use only a part of your subject. In composing a picture, use a viewfinder to crop the image or visual field selectively. “Crop” your ideas, too, with a “mental” viewfinder. *Think:* What element can you detach or focus on?

**Distort.** Twist your subject out of its true shape, proportion or meaning. *Think:* What kind of imagined or actual distortions can you effect? How can you misshape it? Can you make it longer, wider, fatter, narrower? Can you maintain or produce a unique metaphoric and aesthetic quality when you misshape it? Can you melt it, burn it, crush it, spill something on it, bury it, crack it, tear it or subject it to yet other “tortures”? (Distortion also denotes fictionalizing. See PREVARICATE.)



Jein Waldin, *Alter Ego*, 1982. Drawing  
22 × 24" (55.8 × 61 cm). Courtesy the artist.

**Disguise.** Camouflage, conceal, deceive or encrypt: How can you hide, mask or "implant" your subject into another frame of reference? In nature, for example, chameleons, moths and certain other species conceal themselves by mimicry: Their figure imitates the ground. How can you apply this to your subject?

*Think about subliminal imagery:* How can you create a latent image that will communicate subconsciously, below the threshold of conscious awareness?

*The originality and inventiveness of the solution depend as much on talents for finding and formulating problems as on the technical skills for solving the problems once they are found.*

—J. W. Getzels

**Contradict.** Contradict the subject's original function. Contravene, disaffirm, deny, reverse: Many great works of art are, in fact, visual and intellectual contradictions. They may contain opposite, antipodal, antithetical or converse elements which are integrated in their aesthetic and structural form. Contradict laws of nature such as gravity, time, etc.

Think: How can you visualize your subject in connection with the reversal of laws of nature, gravity, magnetic fields, growth cycles, proportions; mechanical and human functions, procedures, games, rituals or social conventions?

Satirical art is based on the observation of social hypocrisy and contradictory behavior. Optical illusions and "flip-flop" designs are equivocal configurations that contradict optical and perceptual harmony. *Think:* How can you use contradiction or reversal to change your subject?

*Doublethink means the power of holding two contradictory beliefs in one's mind simultaneously, and accepting both of them.*

—George Orwell

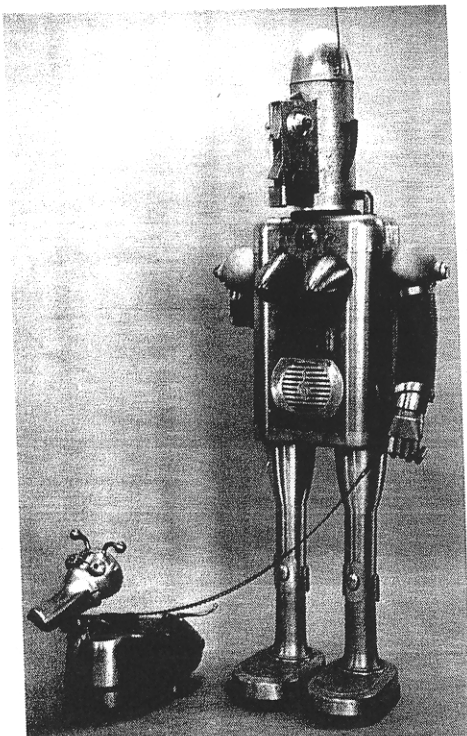
**Parody.** Ridicule, mimic, mock, burlesque or caricature: Make fun of your subject. "Roast" it, lampoon it. Transform it into a visual joke or pun. Exploit the humor factor. Make zany, ludicrous or comic references. Create a visual oxymoron or conundrum.

*Every joke is ultimately a custard pie.*

—George Orwell

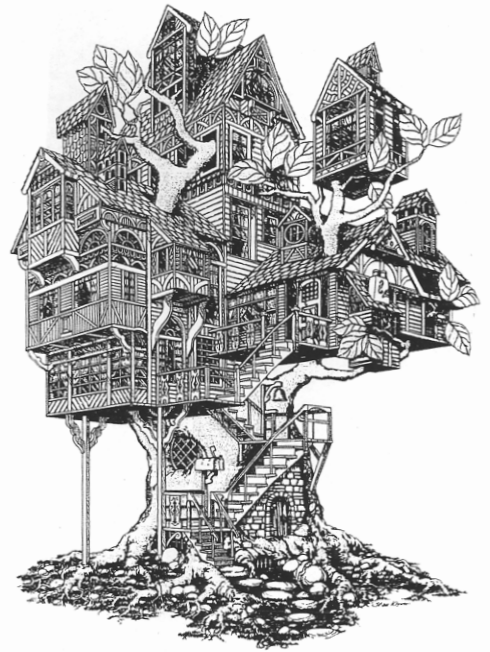
*The sublime and the ridiculous are often so nearly related, that it is difficult to class them separately. One step above the sublime, makes the ridiculous; and one step above the ridiculous, makes the sublime again.*

—Tom Paine



Clayton Bailey, **Robot Lady with Arf the Robot Pet**, 1981. Aluminum, sound movement, 20 × 24" (50.8 × 61 cm); 72 × 24" (15" (182.8 × 61 × 38 cm). Courtesy Triton Museum, Santa Clara, California.

Stan Klyver, **Home in the Woods**, 1986.  
Lithograph, 9×11" (22.8×27.9 cm).  
Courtesy the artist.



**Prevaricate.** Equivocate. Fictionalize, "bend" the truth, falsify, fantasize. Although telling fibs is not considered acceptable social conduct, it is the stuff that legends and myths are made of. *Think:* How can you use your subject as a theme to present ersatz information?

*Equivocate:* Present equivocal information that is subject to two or more interpretations and used to mislead or confuse.

*Faith, here's an equivocator, that could swear in both the scales  
against either scale.*

—William Shakespeare

**Analogize.** Compare. Draw associations: Seek similarities between things that are different. Make comparisons of your subject to elements from different domains, disciplines and realms of thought. *Think:* What can I compare my subject to? What logical and illogical associations can I make?

Remember, stretching analogies is a way of generating *synergistic* effects, new perceptions and potent metaphors.

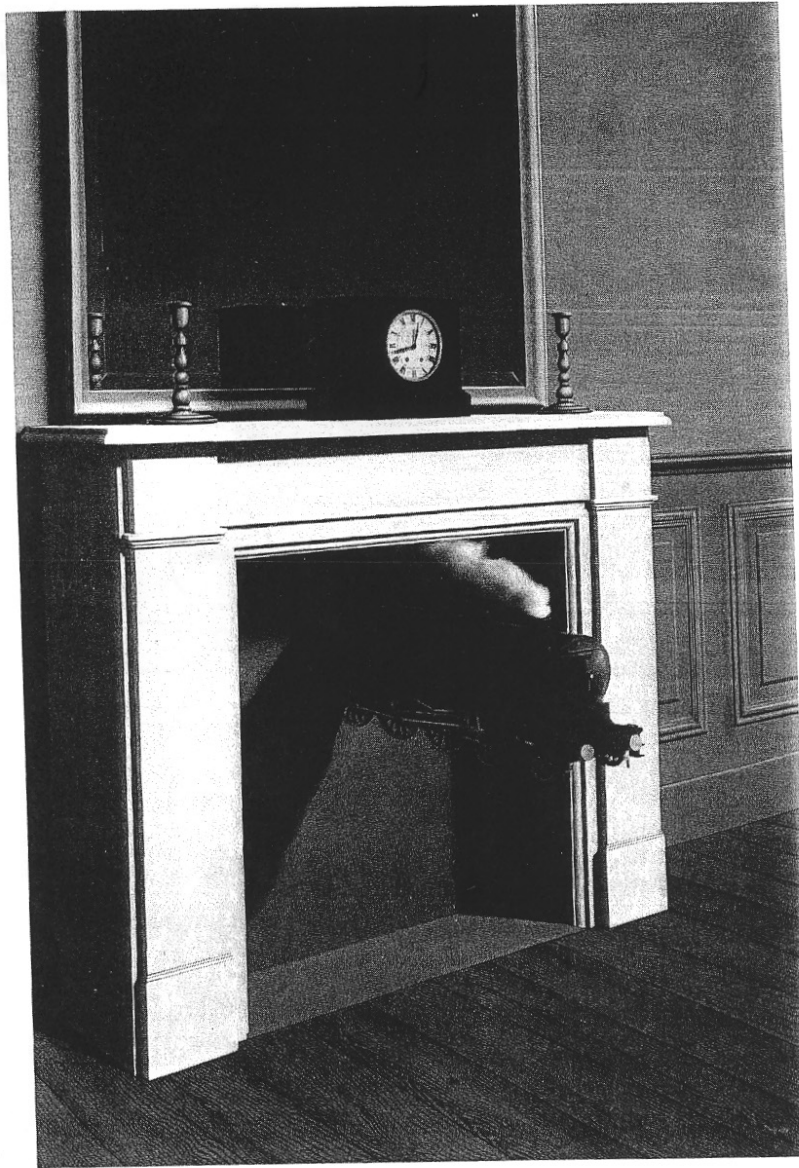
*The person who wants to enhance his creative processes must in-  
dulge in the practice of catching similarities.*

—Sylvano Arieti

**Hybridize.** Cross-fertilize: Wed your subject with an improbable mate. *Think:* "What would you get if you crossed a \_\_\_\_\_ with a \_\_\_\_\_?"

Creative thinking is a form of "mental hybridization" in that ideas are produced by cross-linking subjects from different realms.

Transfer the hybridization mechanism to the use of color, form and structure; cross-fertilize organic and inorganic elements, as well as ideas and perceptions. (See also METAMORPHOSE.)



René Magritte, **Time Transfixed**, 1939. Oil on canvas, 57 ½ × 38" (146 × 96.5 cm). Courtesy The Art Institute of Chicago.

**Fantasize.** Fantasize your subject. Use it to trigger surreal, preposterous, outlandish, outrageous, bizarre thoughts. Topple mental and sensory expectations. How far out can you extend your imagination?

*Think: "What-if" thoughts:* What if automobiles were made of brick? What if alligators played pool? What if insects grew larger than humans? What if night and day occurred simultaneously?

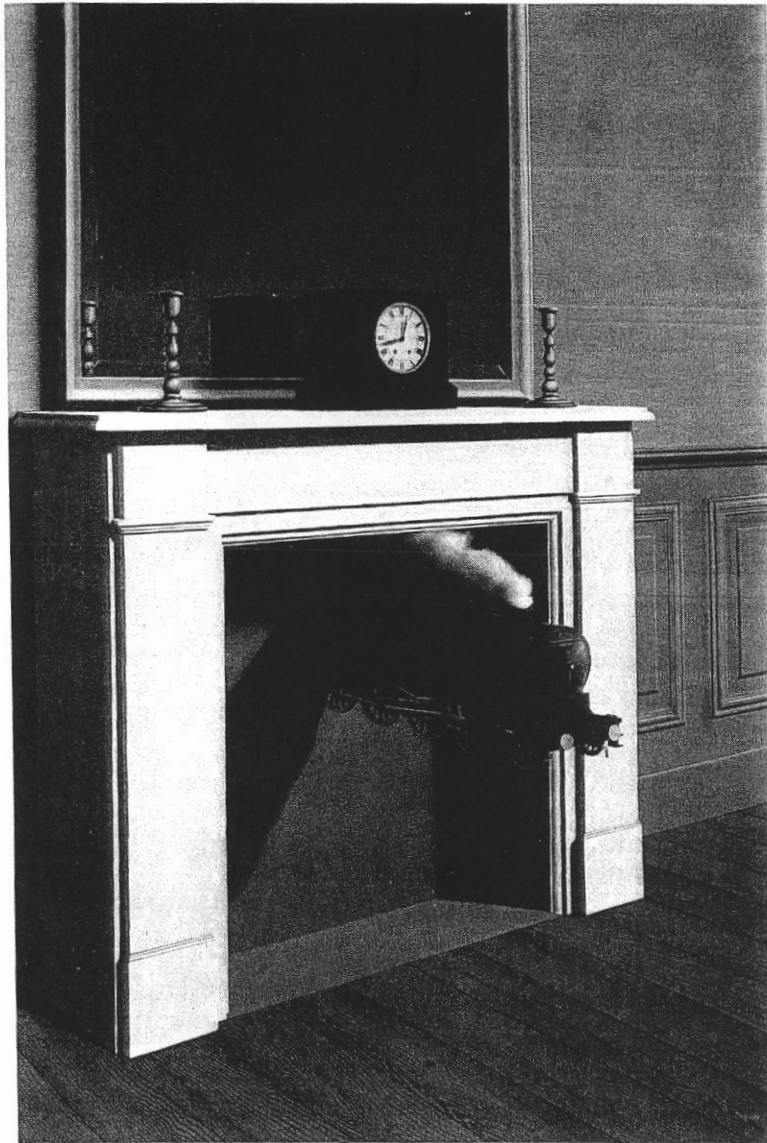
*The world of reality has its limits; the world of imagination is boundless.*

— Jean Jacques Rousseau

Creative transformation demands an iconoclastic attitude. To invent, one must be contrary and go against established conventions and stereotypes. Remember, inventors create great inventions only by breaking the "rules".

### Art-Think: Ways of Working

1. **Identify:** Set the problem or task, identify the subject.
2. **Analyze:** Examine the subject; break it down, classify it.
3. **Ideate:** Think, fantasize, produce ideas. Generate options towards a creative solution. Relate, rearrange, reconstruct.
4. **Select:** Choose your best option.
5. **Implement:** Put your ideas into action. Realize it. Transform imagination and fantasy into tangible form.
6. **Evaluate:** Judge the result. Think about new options and possibilities that have emerged. Go back to Step #1.



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