

CREATIVE CHAOS

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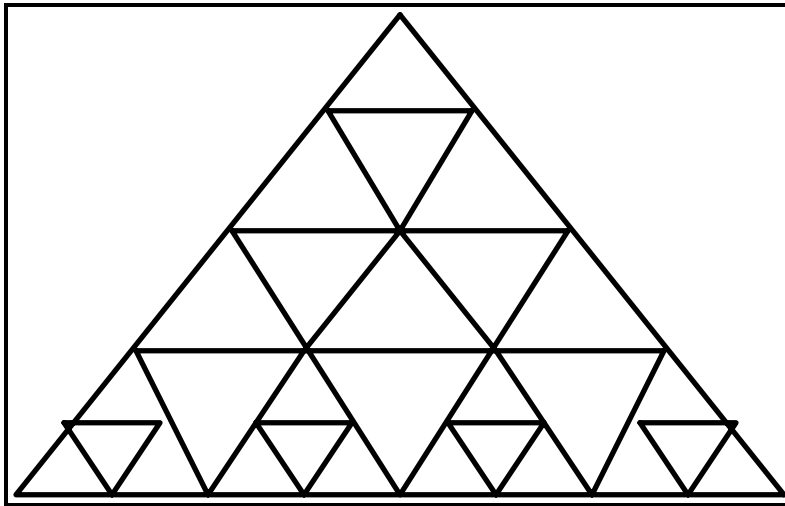
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THE TENSIONS OF CREATIVITY

	NEWTONIAN MACHINE	CHAOTIC LIVING ORGANISM	RANDOM HOT GAS
PARTS	Few Little difference Easy to recognize	Many All different Highly connected	Many All different Unconnected
WHOLE	Equal to sum of the parts Planned design Known by parts	Greater than parts Emergent patterns Known by dynamics	Average of parts Collection of parts Known by statistics
PAST	Sequence of events leading to the present	Embodied in present	Unknowable by part Like the present
FUTURE	Predictable from the past	Emerges from present Unpredictable	Unknowable for part Like the present
DIFFERENCE	Errors Threats Dangerous	Exciting Generative Stimulating	Meaningless Expected Boring
CREATIVITY	Reserved for some Rare Discouraged	Available to all Sensitive to environment Appreciate the attempt	Commonplace Wasted without contact Unnoticed
EXAMPLES	Successful artists Famous inventors	Problem-solving Sense of humor Daily joys in life	Off-the-wall Secret creations



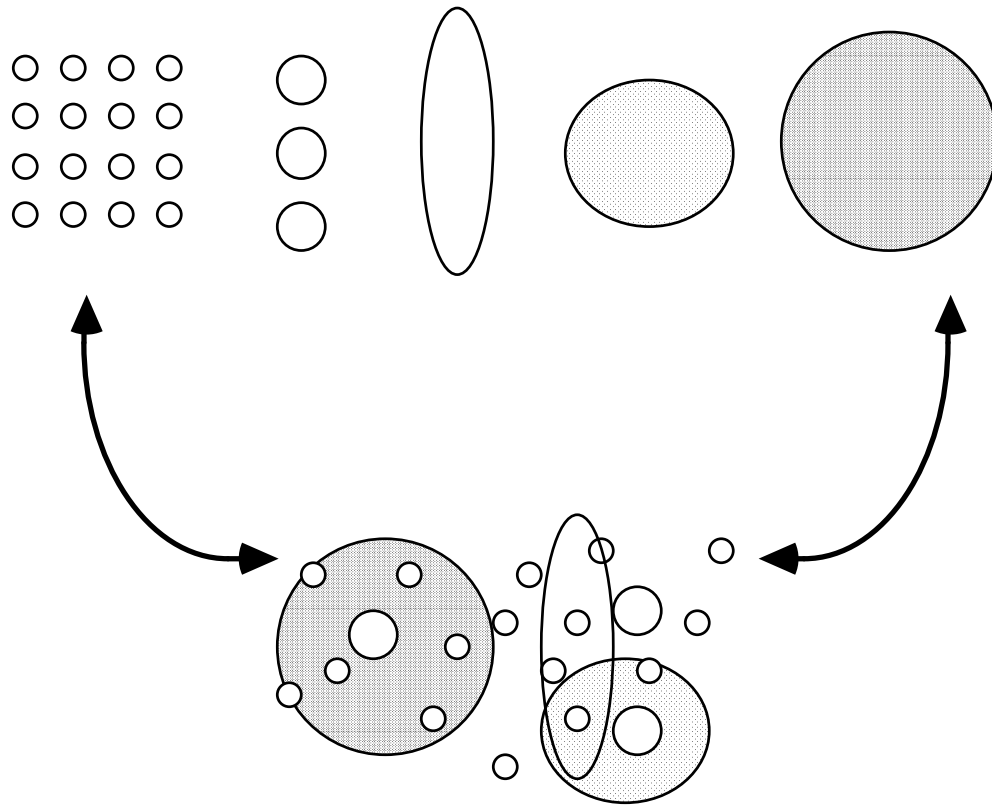
One branch of broccoli looks like the entire stalk. The angles between the veins in a leaf are the same as the angles between the limbs and roots. The capillaries reflect the shapes of the entire cardiovascular system. A seashore remains rugged, whether you see it from 100 feet or 2 inches.

These are all examples of scaling because the patterns in one part are reflected in the patterns of the whole. One shape reappears in different configurations across the whole extent of an interrelated, chaotic system.

Scaling gives us a way to comprehend something that is incredibly large and complex. We can recognize family likenesses across the system and come to some understanding of the whole without dividing it into its parts. Through scaling, we can develop an understanding of the whole as a whole.

Creativity is also a scaled phenomenon. Whether you practice it in the smallest concern or most critical of your life's endeavors, creativity is creativity. When you learn to see yourself practice it in one scale of your life, you will begin to see it in many.

DIFFERENCE



Difference is the life-blood of a chaotic system. Like the emerging patterns in a cloud, variation gives the energy and momentum that defines shapes of majesty and beauty. In living things, difference in function and form provide the framework for growth and change. An artist's creation emerges from the variety of colors, shapes, distances, weights, lights, and textures. Your creative acts, as well, depend on your courage to recognize differences and your willingness to bring them together into creative tension.

A complex system includes many different kinds of differences. Color, shape, temperature, knowledge, values, genders, concerns, gifts, sizes, places, languages, histories, and futures all provide differences that may make a difference in the evolving future of a chaotic system.

The most significant decision you make is about which of all of the possible differences makes a difference. Which of the dimensions offers the most potential for an enlightening and fruitful future? Which promises growth and change that will bring new life and opportunities? That difference must be the of focus for your energy and attention.

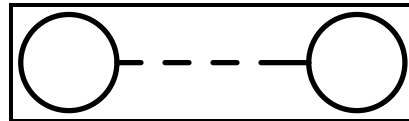


COUPLING

Tight coupling



Loose coupling



Uncoupling

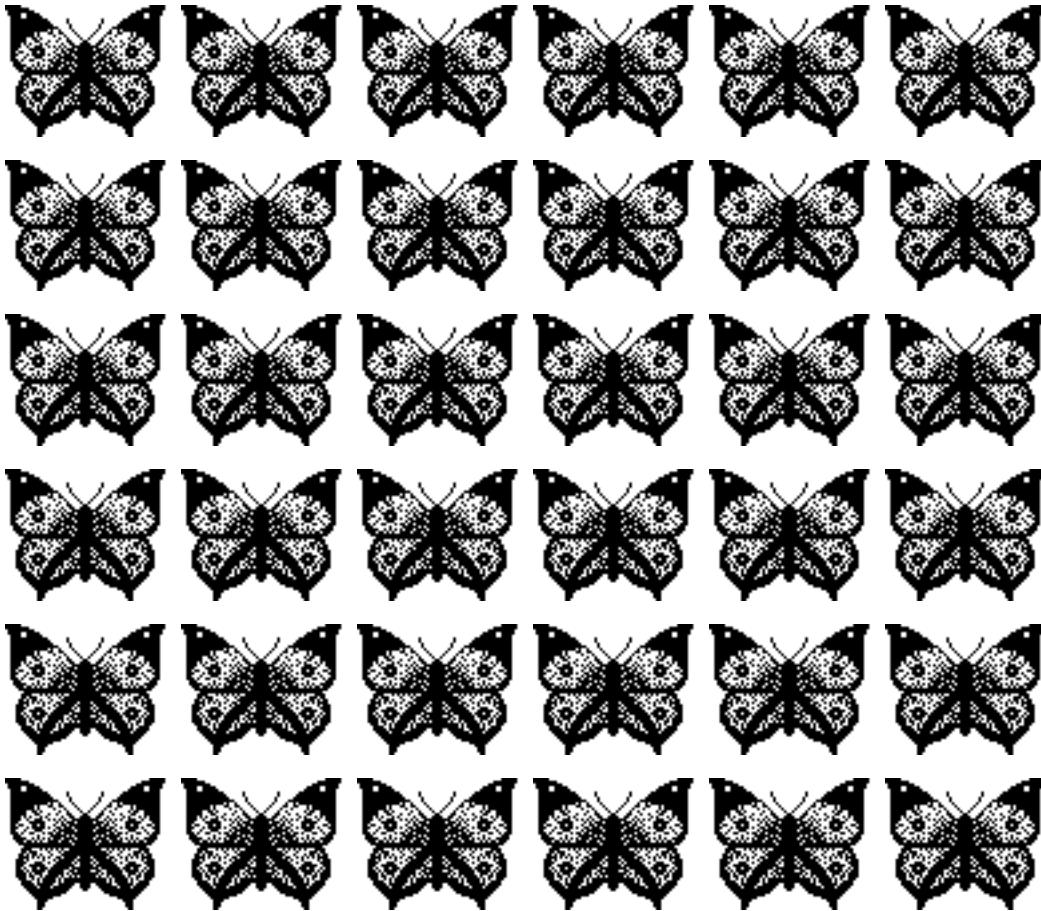


Coupling is the constructive relationship that develops across the boundary between the same and the different. Nature uses the couple to regenerate herself. Human beings use coupling to learn new things and exchange energy and intention. The profound forces of nature, such as gravity and electromagnetism, function as couples through space and time between physical objects.

Every coupling relationship is unique. Each draws its nature from the differences that it bonds together. Movement of physical materials, energy, or information can embody the relationships between the same and the different. Every couple depends on the variety of circumstances that vary with place and time, past and future. The couple that was transforming yesterday may be impotent today. The one that is unimaginable today may be the source of enormous transformation tomorrow.

When you see a difference that makes a difference, your creative act is to experiment with modes of connection until the difference becomes the fuel for a new creation.

BUTTERFLY EFFECTS



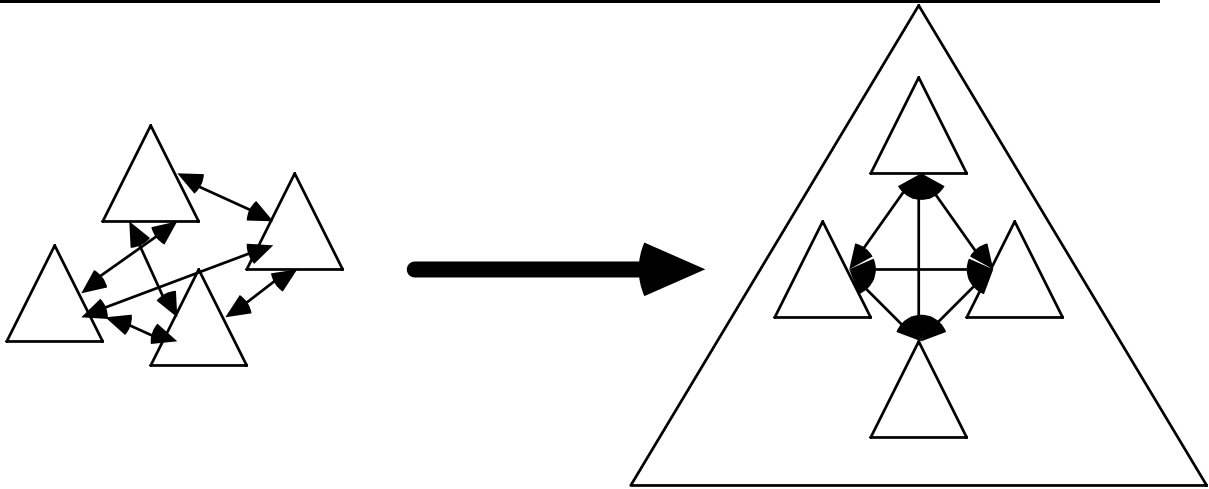
A butterfly flaps its wing in Argentina, and that bit of turbulence is amplified until it becomes a hurricane off the coast of Florida. That is the butterfly effect. In chaotic systems, a very small cause can have tremendous effects. A slight change in the starting conditions of a process may explode into quite different outcomes. You never know which flapping butterfly will bring permanent transformation to your world.

The larger and more outrageous the rumor, the more difficult it is to find its source. Technical innovation derived from a mistake has even become a cliché in our modern mythology: Bell and the spilled acid, Post-It notes and the hymnal, Newton and the falling apple. Personal relationships are begun or ended on the basis of seemingly trivial causes.

A seed of a creative idea may come when you least expect it, or it might arise from a source you would never have imagined. Some inspirations will come and go. Others will sneak up and generate an incredible array of innovative creations.

Be ready for the butterflies when they come because surely they will come.

SELF-ORGANIZATION



Self-organization may sound like an oxymoron, but it is not. A complex system, pushed far from equilibrium will spontaneously generate new structures. Stuart Kauffman calls it, "order for free."

Nature teaches us that self-organization is the most common form of order-building. Convection currents in a pot of heating water, rippling waves on a lake, embryological development, the whirlpool at the base of a waterfall are all examples of order that emerges from the complex interactions of the parts of a chaotic system.

Four things are required for a system to self-organize. There must be some kind of container, otherwise the system will dissipate before it has a chance to reform. There must be difference within the system, otherwise there is no impetus to change. There must be some coupling relationships among the parts, so that each can affect others. Finally, energy, matter, or information must be coming into the system from outside to push the system away from its march toward increasing entropy.

Creativity is a self-organizing phenomenon. It requires a context for expression, or the creative urge will dissipate without reaching its potential. There must be some tension between the same and the different. Some relationship must be forged to allow for transformation between the same and different. And, the creator must be open to new energies and perspectives to feed the creative urge.

ACTION PLAN

ACTIONS FOR CREATIVE CHAOS	1	2	3
1. Practice stopping the clock.			
2. Transform the universe.			
3. Identify the most creative person you know and interview them about their creative experiences.			
4. Spend at least one hour observing children at play.			
5. Listen to music while you work on solving a problem.			
6. Ask everyone in a meeting to switch roles, pretending to be each other for the duration of the meeting.			
7. Keep a log for one day of creative thoughts or acts you perform.			
8. Focus on a problem you've tried to solve before. Reevaluate the problem based on chaos characteristics.			
9. Read poetry aloud to yourself for 30 minutes.			
10. For one day, list all the signs you see of butterfly effects.			
11. For one day, list all the signs you see of transforming feedback loops.			
12. For one day, list all the signs you see of differences that make a difference.			
13. For one day, list all the signs you see of self-organization.			
14. For one day, list all the signs you see of scaling.			
15. Make a list of the ways in which your personal life is Newtonian, random, chaotic.			
16. Attend a stage play and think about the actors' craft.			
17. Spend an afternoon at your favorite art gallery.			
18. Share what you learned today with one person you care about.			
19. Read a book about creativity.			
20. Read a book about chaos or complexity.			

21. Keep a journal to record the barriers to creativity you experience.			
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ACTIONS FOR CREATIVE CHAOS	1	2	3
22. Before a tough meeting or other challenge, repeat to yourself, "I have everything I need to play this scene."			
23. Count the number of times you laugh in a day.			
24. Write a story about your most creative moment.			
25. Learn to meditate or practice meditation skills.			
26. Play a musical instrument.			
27. Draw a picture to represent a tough problem or challenge.			
28. Eat a food that you've never tasted before.			
29. Write a letter to a friend to describe how you feel about an issue that is important to you.			
30. Walk around in your house or office and tape record your description of the things you see.			
31. Take 15 minutes of quiet personal time for yourself every day for a week.			
32. Call a meeting without an agenda and let people talk about whatever comes to their minds.			
33. Select your favorite exercise from those we did today and repeat it with your team.			
34. Use the time you're stuck--in a traffic jam or some other situation beyond your control--to play with images or ideas.			
35. Write an article for the January, 2005 edition of Fortune Magazine describing your contributions to a worthy cause.			
36. Walk around the block and describe sights, sounds, feelings, smells, and tastes you encounter.			
37. Sit through a whole meeting and don't say a word, just watch and listen to others. Record your feelings.			
38. Spend at least one hour playing with children.			
39. Walk around your house naked, if that isn't your usual practice. In that case, do it clothed.			
40. Carry a camera with you for a whole day and take a picture of whatever draws your attention.			
41.			

42.			
43.			

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